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University of Cape Town

The Combine Harvester

defining a new food retail typology

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01. INTRODUCTION

Sarah lives in Oranjezicht. She's cooking dinner tonight. She gets into her car; drives to the Gardens Centre; parks in undercover parking and enters the air-conditioned mall. In Woolies, she fills her trolley with unblemished, perfectly packaged produce. She'll buy two punnets of Kenyan micro greens and save R10.

The Harvard Design School studies the phenomenon of shopping as arguably the last remaining form of public activity: 'Shopping has become one of the only means in which we experience activity. It, in many cases, determines, sustains, and often defines the identity of an institution, or a city.' [Chinua et al., 2002] The development of the supermarket-market hybrid as a new food retail typology emerges out of a theoretical enquiry into the socio-spatial implications of the nature of food retail.

The hybrid, which transpires out of mapping the change from historic market to supermarket and investigations into the complex current food system, is defined by its cross-programming of processes between farm and table on one site to collapse the space from production to consumption. The analogy is thus drawn between the combine harvester, a large scale agricultural tool used to combine three operations into one process, and the proposed food machine. An efficient, organic, bustling food machine emerges within the constraints of the Woodstock site.

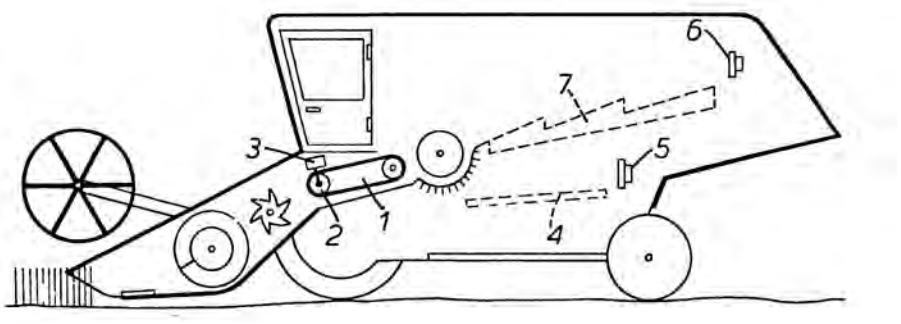


Figure 1 Illustration of a combine harvester [http://www.google.com/patents/EP0077667A1?cl=en, accessed 20 October 2014]

02. FOOD AS DEISGN TOOL

The project developed out of a theoretical inquiry into the use of food as a design tool to facilitate urban regeneration.

The need for change arises from the loss of public space due to corporate control over food and food retail taking place in privatised environments. This socio-spatial polarisation becomes visible when mapping the change from historic marketplace to supermarket. The two primary concerns which arise from this socio-spatial polarisation are that of food being viewed as a utilitarian commodity, which allows routine shopping to take place in a supermarket rather than a market, and an evacuation of the public realm with the disappearance of food from public marketplaces.

Spatial and infrastructure analyses of existing food retail models within the existing food system in Cape Town identify an appropriate supermarket-market hybrid that facilitates the flows of people and produce while regenerating public space.

From Market to Supermarket

> Food has been blindly used as a design tool for millennia. [Steel, 2008]

How food is bought and sold in cities transforms the physical shape of cities and the nature of public space. The turn of the twentieth century marks the beginning of the refashioning of the city with the pull of food from city centres to the periphery. Development of typologies from marketplace, to supermarket, to convenience store illustrates this spatial and social transformation of cities.

Every pre-industrial city was shaped by food with markets at their heart: the civic hub. Marketplaces were places of interaction where people went both to buy produce and to socialise. Often the only large open spaces, marketplaces doubled up as event spaces. When the countryside came to town, markets were crowded with livestock and the city was taken over by festivities. Here one was able to view 'one half to have hats of straw and one forth part to be bare-legged.' [Steel, 2008]

John Ogilby's Large and Accurate Map of the City of London, 1676, illustrates how closely the city mirrored the landscape that fed it. The influence of food is visible in the map where roads lead to the heart of the city, the market.

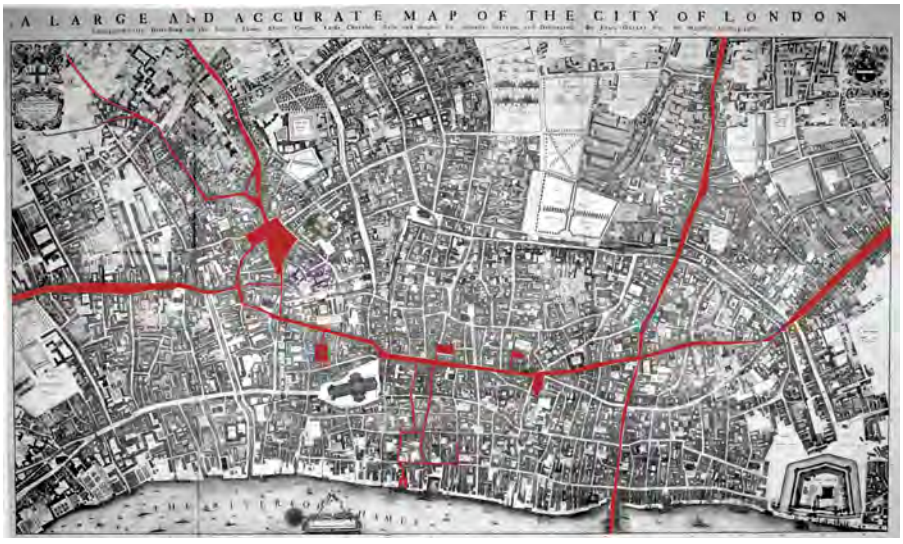


Figure 2 John Ogilby's Large and Accurate Map of the City of London highlighting the food market and supply routes [http://en.wikisource.org, accessed 5 May 2014]

The introduction of cars in the 1920s brought congestion to the city centres and pedestrians competed with automobiles, trucks and electric rail cars. Streets were filled with dust, noise and traffic jams. Driving facilitated decentralisation, as cars assisted a much-needed escape from the congestion. The travel radius

of individuals was extended and ‘instead of the automobile conforming to the limitations of the city, the city began to conform to the necessities and services of the automobile’. [Longstreth, 2008] The shopping centre was ‘planned to operate as a unified business entity and provide an alternative to major established marketplaces, including downtown.’ [Longstreth, 1997]

Figure 3 “Popular Nightmares, No.1,” editorial cartoon by Gale. (Los Angeles Times, 26 January 1924, I-1.) [Longstreth, 1997]

Figure 4 “The Pedestrian’s Nightmare,” editorial cartoon. (Hollywood Daily Citizen, 11 August 1927, 12.) [Longstreth, 1997]

The Southdale Shopping Centre in Minneapolis, 1956, designed by Victor Gruen, was the first enclosed mall. The greatest scale of internalised shopping in an artificial climate was achieved. The intention was ‘establishing completely weather-protected, covered and climatised public spaces’ as an escape from the insufferable public pedestrian areas due to extreme weather. The external streets were turned into an internalised exterior where urban activity could flow without the interruption of weather. The mall would become ‘not only a meeting ground but also, in evening hours, the place for the most important events.’ [Gruen, 1963; Harvard, 2002]

A survey carried out by the British Department of the Environment, Transport and the Regions (DETR) in 1998 found that ‘a new superstore built on the edge of a town could reduce market share for city-centre food shops by as much as 75 per cent’. Superstores were developed on the outskirts of cities where they could ‘source food cheaply and move it around in bulk’. [Steel, 2008] A report by the New Economic Department showed that even a small reduction in business on the high street had a knock on effect and led to the ultimate tipping point where old town centres were no longer viable: ‘Once the downtown starts to shut down, people

who preferred to shop there have no choice but to switch to the supermarket. What begins as a seemingly harmless ripple becomes a powerful and destructive wave'. [Ghost Town Britain, 2002]

Figure 5 The Southdale Shopping Centre was the first enclosed mall designed by Victor Gruen. Air-conditioning facilitated a controlled climate for shopping and former urban activity could now be internalised where weather would not interfere.] [http://www.mnhs.org, accessed 5 May 2014]

The role of the historic city centre, which was chiefly the buying and selling of food, became redundant with the appearance of supermarkets. With food moving to the periphery of cities, the very concept of a supermarket was at odds with the public role of historic cities. [Steel, 2008]

The second wave of supermarket expansion took place a decade after the concept of the superstore was introduced. The void created in city centres, as a result of superstores, presented new business opportunities. In Britain, one of the Big Four supermarkets, Tesco, led the way in opening 'Metro' stores in 1998 - 'corporate replicas of the local shops it had helped to destroy'. [Steel, 2008] Competition to claim as much high-street property as possible to fill the gap with much needed inner-city food shops meant that independent food retailers now had to compete directly with corporations. The reintroduction of food into the city centres, in the form of convenience stores, does not however re-establish the public life associated with historic high streets and markets.

The global game of supermarket expansion was blocked in certain cities. In Barcelona, Spain, the government enforced legislation to protect markets. Supermarkets were permitted but they were prohibited from selling fresh produce on street level. There are now 43 active food markets in Barcelona where people routinely shop for food. People's support of local food shops and markets results in a preservation of Barcelona's street life. 'Wherever food markets survive, they bring a quality of urban life that is all too rare in the West: a sense of belonging, engagement, character. They connect us to an ancient sort of public life. People have always come to markets in order to socialise as well as to buy food, and the need for such spaces in which to mingle is as great now as it has ever been - arguably greater, since such few opportunities exist in modern life.' [Steel, 2008]

Socio-spatial implications of food retail
From congested to homogenous culture

Although modernist planning intentions were to revitalise the urban public by providing an alternative to the congested and unhealthy traditional street system, what was achieved through interiorisation contradicted these intentions. By eliminating the public spaces supported by streets and squares, the urban crowds and outdoor public domain fell away. The displacement of social life from these outdoor spaces to indoor spaces of homes, cars and malls does not 'merely reproduce the outdoor city and its citizenry in a new interior setting'. [Sandercock, 1998] Rather, the new urban landscape, which excludes certain groups, 'deals exclusively with commercialisation, lack of authenticity, control and exclusion'. [Hajer, 2001]

The scale of the modernist city is largely to blame for this socio-spatial polarisation. The size and speed of the car replaces that of the pedestrian. It is the homogenisation, privatisation and thematisation of the network city that makes residential enclaves, gated communities, shopping malls and business parks attractive. The functional bubbles are accessed by car, allowing one to avoid all evils that exist in between. Rem Koolhaas asserts in Generic Cities that cities are witnessing an 'evacuation of the public realm'. [Koolhaas, 1995]

The change from cities being congested, where multiplicity and incongruence exist, to cities of privatised homogenity, leaves no 'space for differences' - the space to be confronted with the other and his dispositions, behaviours and beliefs. This is an essential aspect of a democratic society, 'because only confrontations with other perspectives of the world, will lead to reflection on your own assumptions'. [Hajer, 2001]

The difference in public spaces created by a market to those of a supermarket is visible in Forum Les Halles, Paris, where a supermarket development replaced a traditional market. When the streets surrounding Les Halles, located in the heart of Paris, became too congested with cars and pedestrians accessing the wholesale market, the city relocated the market to a periphery location near Orly airport. The glass and iron halls of Les Halles were demolished and replaced by an underground shopping centre and park in 1976. The result is a 'desolate, crime-ridden wasteland in the heart of the city.' [Steel, 2008]

The old market was once the central gathering space for all Parisians, 'the underbelly of Paris' as called by author Emile Zola, where traders and customers would gather amongst the hundreds of fresh produce stalls. The replacement

Top: figure 6 Photograph of the glass and iron halls of Les Halles showing the market to occupy the entire block. The replacement shopping centre occupies a small area of the site and the remaining space is park. This illustrates the change in scale and density of the two food retail typologies [http://beyond-paris.blogspot.com, accessed 28 April 2014]

Middle: figure 7 The shopping centre is sunken below street level. There is a large internal public space [http://www.bugbog.com, accessed 28 April 2014]

Bottom: figure 8 A proposal, which has been accepted, for the construction of a canopy over the sunken shopping centre in an effort to improve the urban condition [http://forum.skyscraperpage.com, accessed 09 May 2014]

shopping centre, in which the supermarket is located, is devoid of this interaction. The mall is sunken, which creates a further disconnection from public street activity. [http://www.aviewoncities.com/paris/forumdeshalles.htm]

Unlike real public spaces, malls, which are developed with supermarkets at their core, do not accommodate 'otherness'. 'Markets are public spaces; malls are private ones.' [Steel, 2008] Streets form the basis of the urban public realm by being a shared space with which people identify, be it through ownership or use. 'Public' shopping malls, through which supermarkets are accessed, allow no space for protest. Any behaviour that causes unrest and threatens the 'middle-class ingenuity, respectability, and order' is prohibited. [Longstreth, 1997] Democratic action is thus minimalised.

Political philosopher Hannah Arendt speaks of the need for plurality, where 'plurality is, simply put, the fact that one is born into a world populated by other people who are different from oneself and who one has to come to terms with. It is the condition in which humans are forced to reveal and communicate their uniqueness in order to facilitate living with each other. Plurality is located within public spaces - only within their borders are action and speech possible.' [Arendt, 1994]

The regeneration of public space, through a change in nature of food retail, needs to take place to allow for space to nurture and maintain democracy, and to facilitate place making. This was historically the role of the marketplace: a place for comedy, tragedy, protests, riots and executions.

Through mapping the spatial change form historic marketplace to supermarket, the influence of food retail on public space and interaction between people becomes apparent. The focus of the thesis is thus to redefine the spatial nature of food retail to facilitate social change.

Analysis of the current food system
'Farm to table' networks

An early drawing (left) illustrating the connections between exposed and concealed networks/systems led to an investigation of the current food system feeding Cape Town.

Food reaches households via a complex food system. By identifying the infrastructure required to support different models within the system of getting produce from 'farm to table', the distance between the produce and consumer can be mapped. The nature of infrastructure required to support each retail type varies depending on the market operating hours, programme and ultimately the flows of people and produce. The models that I have identified within the food system are broken down into three scales, namely the macro, meso and micro.

Investigations into the macro, meso and micro food systems that feed Cape Town were undertaken to determine an appropriate scale of infrastructure that will service the hybrid and collapse the space between production and consumption. The socio-spatial implications of food retail become apparent through analysis of the models. Case studies within each of the food system models focus on fresh produce and value added retail types.

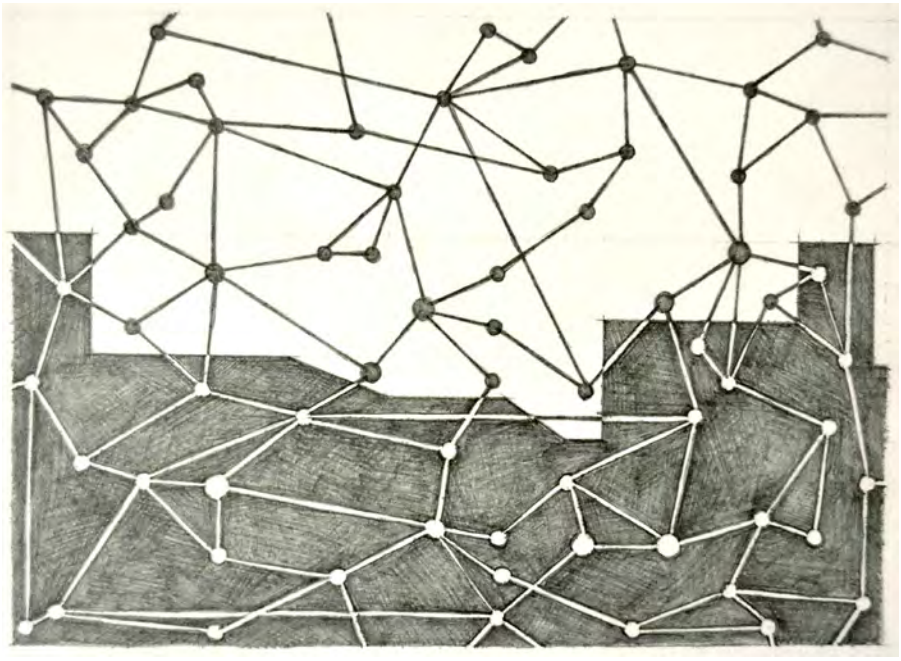
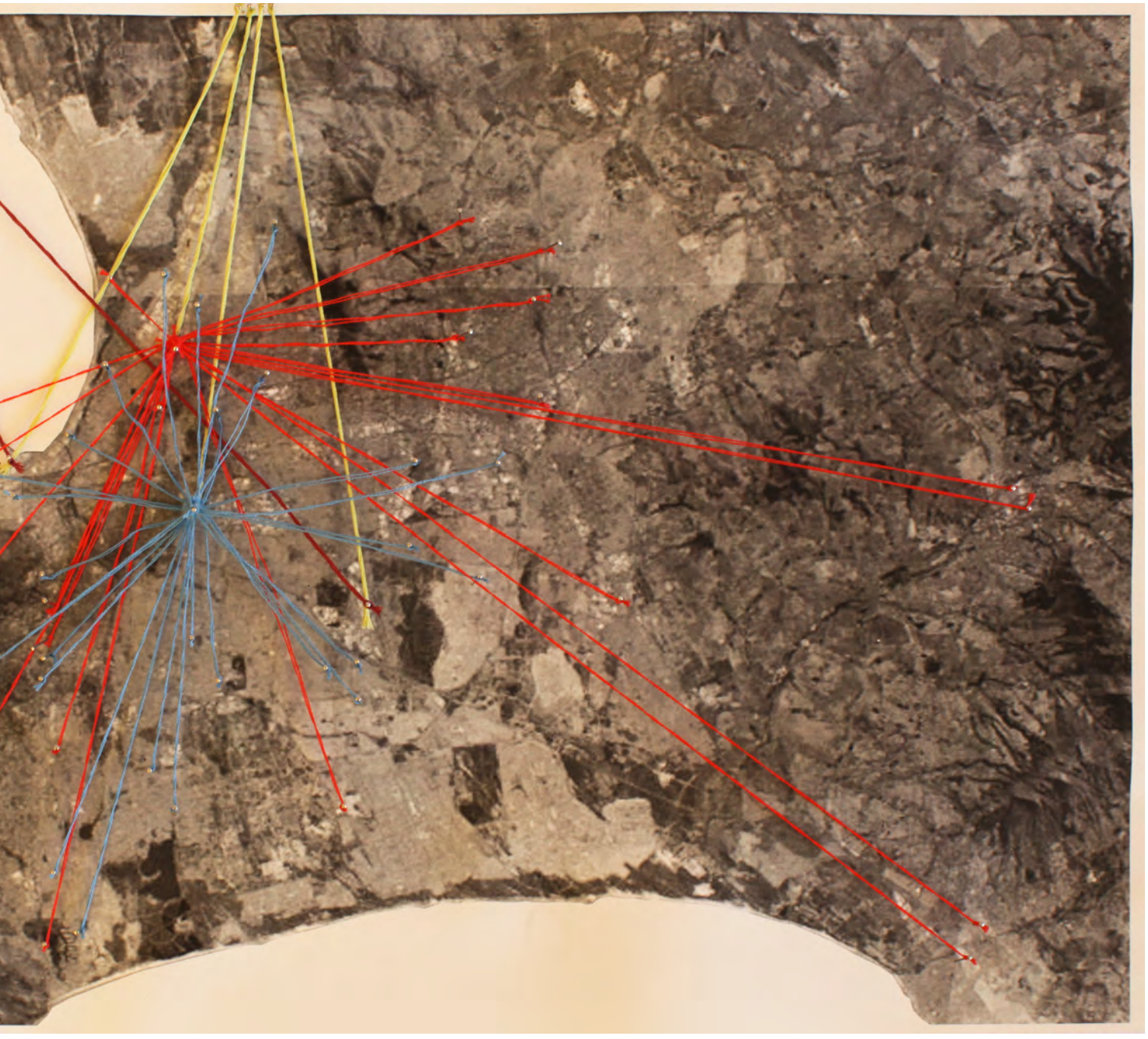


figure 9 Concealed and revealed networks [by author, 2014]

Right: figure 10 Micro scale food distribution network [by author, 2014]



Macro food system model

The macro scale is defined by the nature of trade which takes place at supermarkets, whose focus is on maximum convenience by providing daily access to food. The scale of trade is large and supermarkets thus support industrial agriculture, where farmers are able to offer large quantities of produce.

Contemporary supermarket concepts aim to offer a one-stop shopping ‘experience’ by offering food in every possible stage of processing, in a market-like environment. Butternut is available to customers as whole butternut, chopped butternut, pre-packaged butternut soup, and fresh butternut soup served at the in-store cafe. As supermarkets cater to the mass market of convenience shoppers, the resultant infrastructure required to facilitate this one-stop shopping experience is extensive.

Packaged produce from farm packhouses arrives at the supermarket via a central distribution centre. The time lapse between harvest and shelf for Wooloworths fresh produce differs depending on the product, but the maximum time lapse is two days. To maintain maximum product quality during this time, cold storage is key. The Woolworths temperature control system is very stringent and, for example, if the temperature of the trucks is out of specification, the stock is rejected. All service infrastructure is concealed from customers.

In maintaining the produce quality through temperature control, considerable

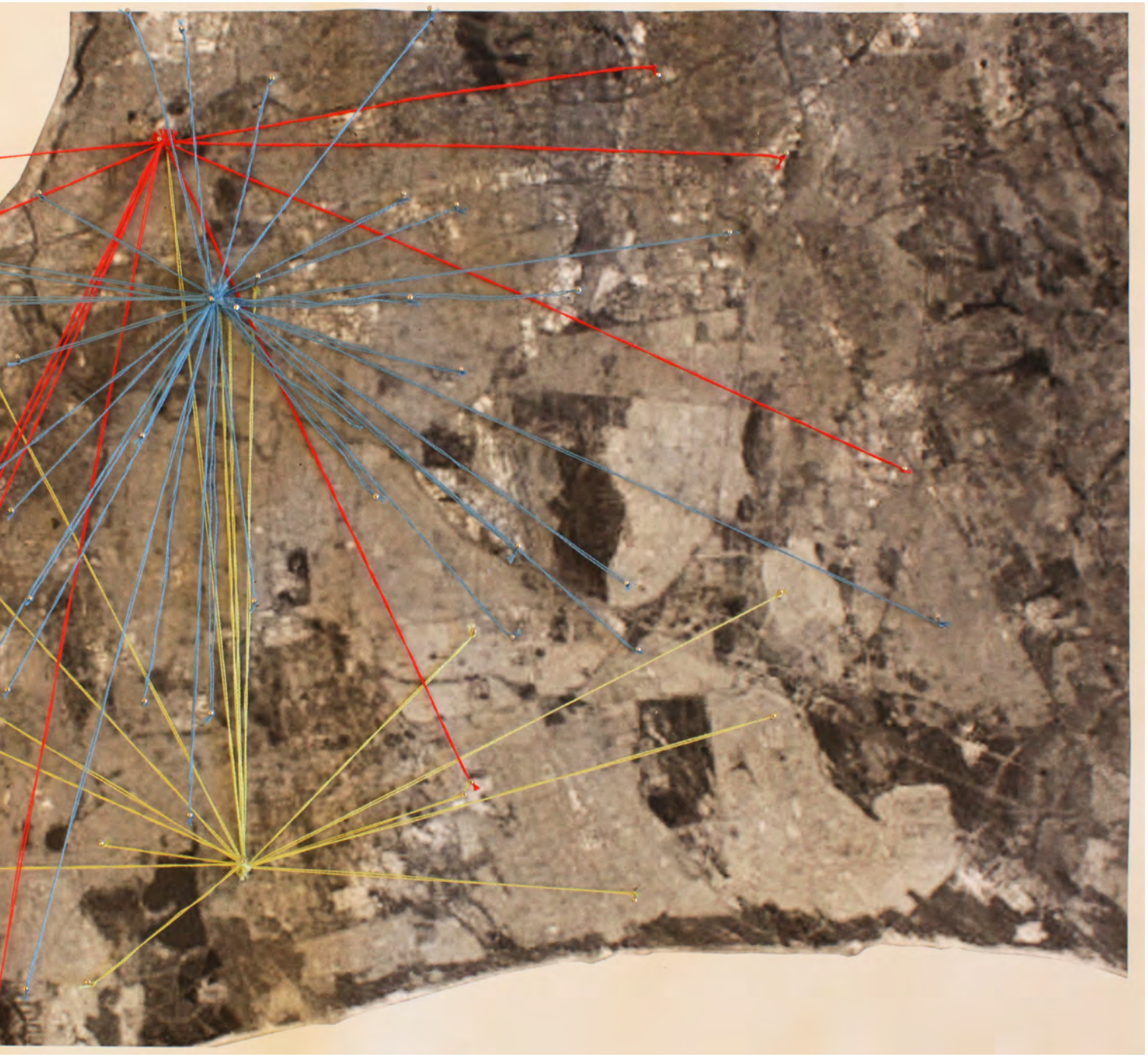
energy is consumed by refrigeration and air-conditioning. The supermarket relies on packaging to reassure customers that what they purchase is safe and fresh and packaging increases the ease/convenience of the shopping experience. The result is produce with high embodied energy.

Supermarkets also provide convenience through the extensive variety of produce sold, providing consumers with imported produce when it cannot be sourced from within South Africa. This encourages ‘industrial eating’: the ‘unconscious consumption based on our desire to eat whatever we want whenever we want it’. [Pollan, 2006] The process is fuel intensive and the concept of seasonal food production, and consequent connection to the land, has dissolved.

Supermarket ‘convenience stores’ are strategically located to optimise convenience with ample parking provided. Supermarkets operate daily and a spectrum of income groups are catered for through produce variety. The ease of access and consistency of the one-stop shopping experience is attractive to daily routine shoppers.

An ideal, in the design of the hybrid, would be to maintain this quality and convenience, but to do so in a more sustainable manner where the distance between farm and table is dissolved.

Right: figure 11 Meso scale food distribution network [by author, 2014]



Meso food system model

The meso model is defined by the nature of trade, which takes place at the market, unlike supermarkets, and which supports individual traders. The case study of the People's Market in Epping is included in discussion on the meso model of the food system. Three scales of market exist in Epping Industria: the large scale Cape Town Fresh Produce Market {CTFPM), the intermediate scale People's Market, which is located on the perimeter of the CTFPM, and the small scale informal market, which is outside the gates of the CTFPM. The People's Market provides a level of infrastructure that allows for retail of bulk and individual produce. The market trades fresh produce only. Traders have a direct relationship with farmers and customers.

Top: figure 12 Map of Epping Industria 1 locating the three different scales of market [Google Earth, 2014]

Left: figure 13 Cape Town Fresh Produce Market [Photograph by author, 2014]

Left: figure 14 The People's Market [Photograph by author, 2014]

Right: figure 15 Informal market [Photograph by author, 2014]

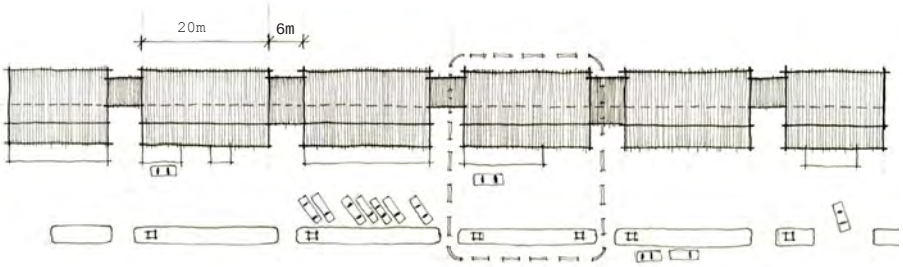
The benefit of a direct relationship between farmer and trader was well illustrated on my first visit to the People's Market, accompanied by my mother, a farmer. Questions about how fruit reached the market from the current supplier, and the quality and price of the fruit, led to the trader, Ebrahim, discussing potential deals with my mother due to his dissatisfaction with his current supplier. This was followed by visits to the farm in Elgin by Ebrahim to investigate the fruit, select apples and transport them back to the market for sale. Traders establish relationships with farmers, and this produce knowledge is then transferred to the market customers.

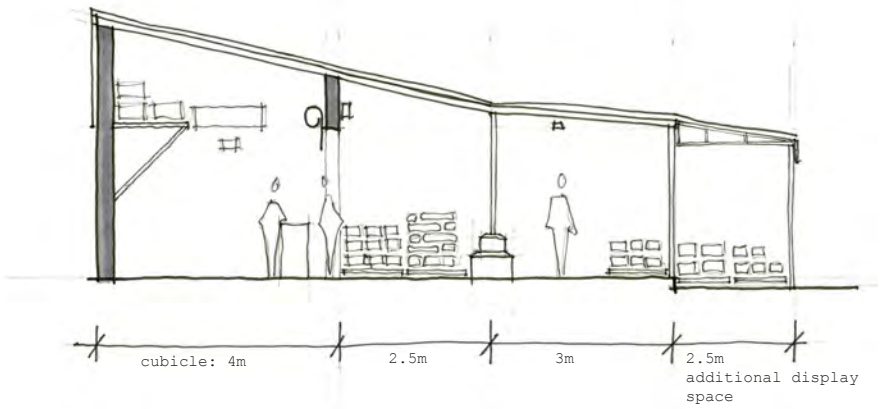
The market sells only fresh fruit and vegetables and required infrastructure is minimal. Traders share water points, waste points and ablutions. All display infrastructure (predominantly pallets) is temporary.

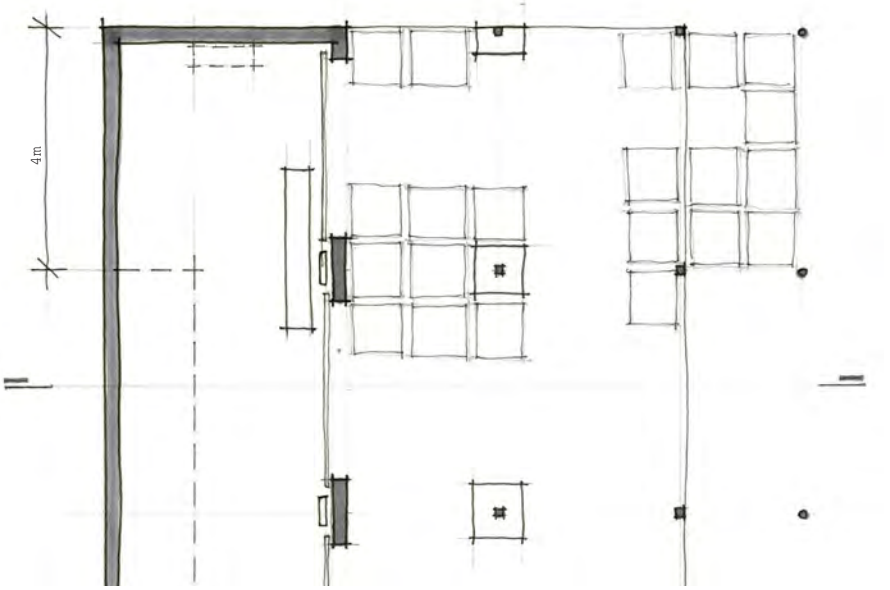
All produce is seasonal and the quantities for sale at the market indicate what is

happening on the farms. Traders receive produce daily and majority of produce is sold on the day of arrival. Cold storage is thus unnecessary as turnover of produce is quick. Energy costs are therefore dramatically lower than those of the supermarket.

Although the market operates daily, market users are predominantly traders and hawkers rather than routine shoppers. The market location, situated in an industrial area, does not offer convenience and pedestrian traffic is minimal. Produce variety is also limited.







Top: figure 16 Sketch illustrating linear arrangements of cubicles with amenities in between [by author, 2014]

Middle: figure 17 Section through cubicle with display in front
[by author, 2014]

Bottom: figure 18 Plan of cubicles [by author, 2014]

Left figure 19 Vehicles arrive to collect produce at the People's Market [by author, 27 March 2014]

Right figure 20 Produce is available in bulk and small quantities at the People's Market [by author, 27 March 2014]

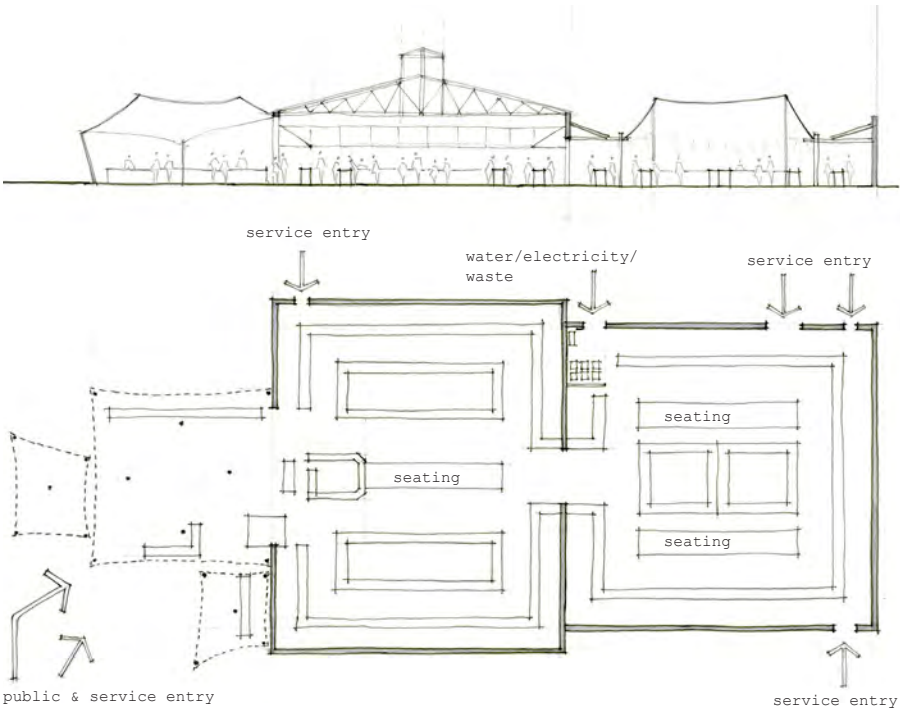
The Neighbourgoods Market in Woodstock is another example of the meso model but differs to the People's Market in that value added and artisanal produce are also sold, rather than solely fresh produce.

The size, density and layout of the Neighbourgoods Market facilitates successful interactions between people and, as market users are able to interact with traders, a relationship is formed between the produce and the consumer through the input of the trader. For example, by allowing the cook to share the same space as the market users, users are able to engage in the process of produce evolving from raw state to state of consumption. This is heightened by providing space for consumption within the trading space.

Left figure 21 Traders and customers share the same space. Distance between place of production and consumption is reduced and the relationship between produce and consumer is enhanced [http://puckoo.net, accessed 10 May 2014]

Right figure 22 Trader, Julie, of Ocean Jewel introducing her stock for the day. She is an advocate for SASSI so all fish sold at her stall is sustainable. Interaction between trader and customer is illustrated [http://theincidentaltourist.com, accessed 30 April 2014]

The market, which operates weekly, caters to an exclusive user group who can afford the specialised ‘artisanal’ goods. The user group is thus limited and the overlap of existing users in the area is thus forfeited.

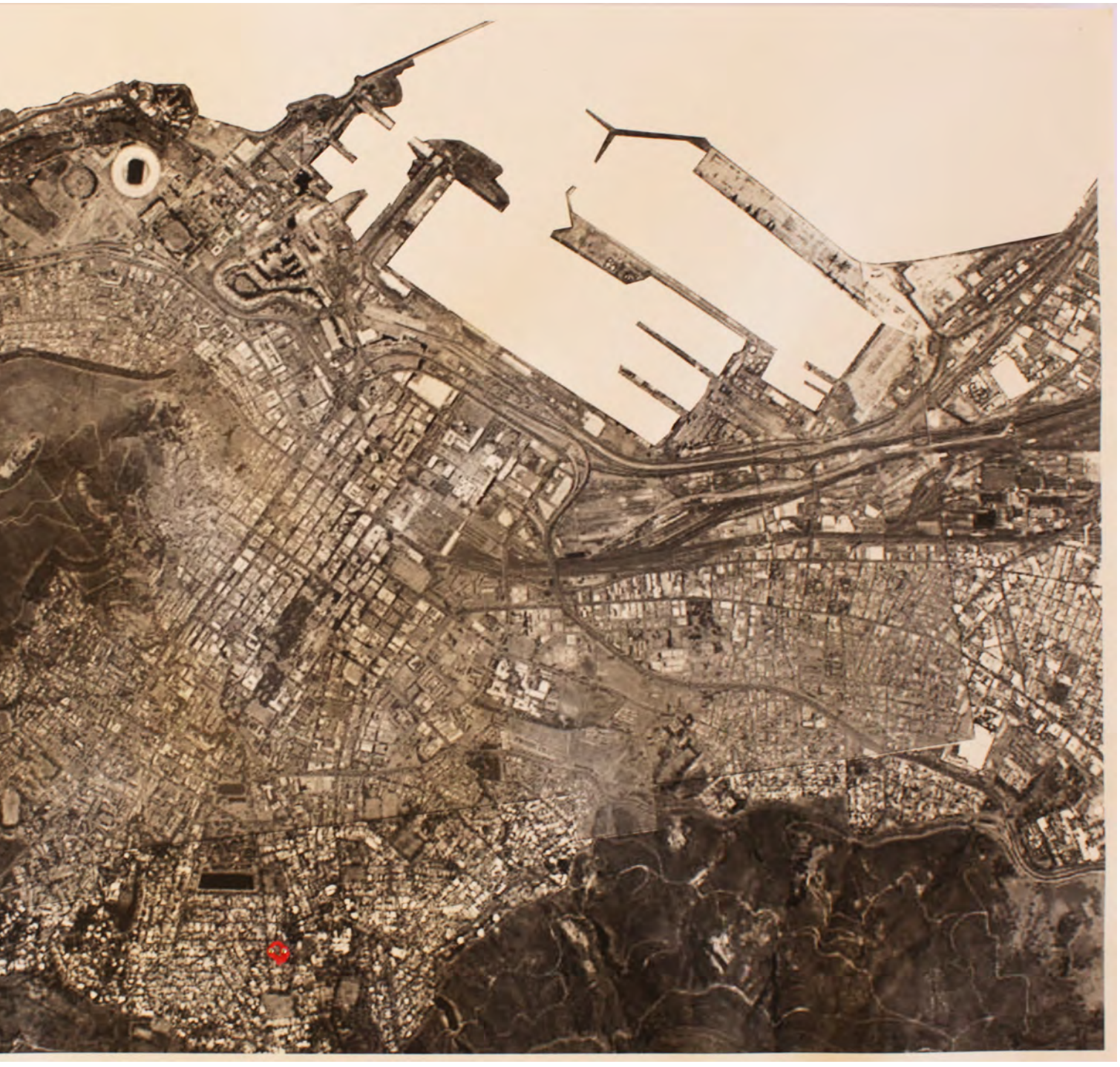


Top Figure 23 Section through the Neighbourgoods Market
[by author, 2014]

Bottom Figure 24 Plan of the Neighbourgoods Market illustrating service and public entries, seating and trade space, and water and waste point
[by author, 2014]

Fixed infrastructure and services are minimal at the Neighbourgoods Market. The market operates in a very informal fashion. Plug points scattered around the market area have extension leads leading to stalls that require electricity. A semi-screened off area houses communal bins, the primary water point and the electricity mains box. Temporary infrastructure includes display stands and work surfaces.

Right: figure 25 Micro scale food distribution network [by author, 2014]



Micro food system model

Food production, processing, retail, consumption and waste all occur in the same space at the Oranjezicht City Farm (OZCF) and corresponding weekly market, making this a good example of the micro food system model. It is the fact that the produce is grown on the site of the market that differentiates the OZCF from both the macro and meso models. It provides inspiration for a closed-loop food production system.

The proximity between place of production and space of consumption is reduced to an absolute minimum. The market users have direct contact with the urban farm and all obstacles between 'farm and table' are dissolved. Members of the public can harvest produce weekly during the Guided Harvest. Here, visitors engage directly with food and a connection with the land from which the food is grown is established.

Left figure 26 Farmer, Mario, assisting someone with harvesting produce [http://www.ozcf.co.za, accessed 09 May 2014]

Right figure 27 Market Day at the OZCF [http://www.ozcf.co.za, accessed 09 May 2014]

Understanding the infrastructure needed to support the food system across the three scales gives insight into the extent of infrastructure required, which increases as the distance between farm and table increases, and the connection between produce and consumer.

03. DEFINING THE HYBRID

The Supermarket Condition

'With industrialisation, urban authorities loosened their grip on food supply and commercial companies became responsible for feeding the urban population. The result is that we are totally reliant on trans-national corporations to feed us, who have no civic responsibility, and whose interests lie in making money.' [Steel, 2008]

Statistics from 2012 show supermarkets accounting for 60 percent of all food sales in South Africa, but accounting for less than two percent of all retail outlets. The increasing appearance of large formal retailers in townships has a clear impact on the informal food markets. 'The African Co-operative for Hawkers and Informal Businesses (ACHIB) has stated that about 150 informal retail stores (spazas) in Soweto alone have been forced out of business in part due to the entry of large retail chains into the township.' [Bissiker, 2006]

Fresh produce sourced in South African supermarkets is 'less likely to be locally sourced, coming from elsewhere within South Africa or from beyond national borders.' [Battersby, 2012] Yet shopping in supermarkets takes place because supermarkets generally offer cheaper prices per unit than do spazas, and offer higher quality food as well as variety of goods. 'Supermarket wholesalers may raise prices in anticipation of shortages using seasonal forecasts, but traders buying directly from farmers and selling in small traders may not shift their pricing structures through lack of information. Thus the same food from the same source may enter the market at different prices.' [Battersby, 2012]

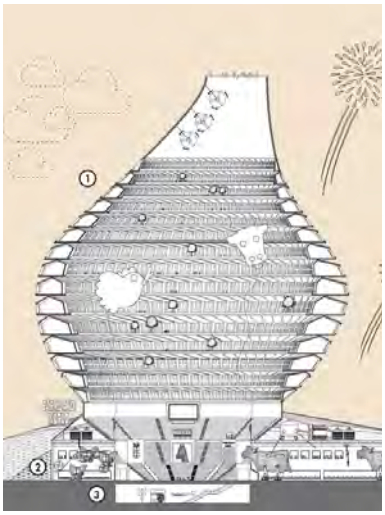
Any interaction between farmer and consumer has been dissolved by the industrial supply chain of supermarkets. The excitement of seasons has been collapsed by supermarkets offering all produce year round. This global summertime is made possible by imports and the result is an increase in pressure on farmers to meet demands of increasingly importunate consumers. 'Industrial eating' is encouraged: the 'unconscious consumption based on our desire to eat whatever we want whenever we want it.' [Pollan, 2006] This process is fuel intensive and the concept

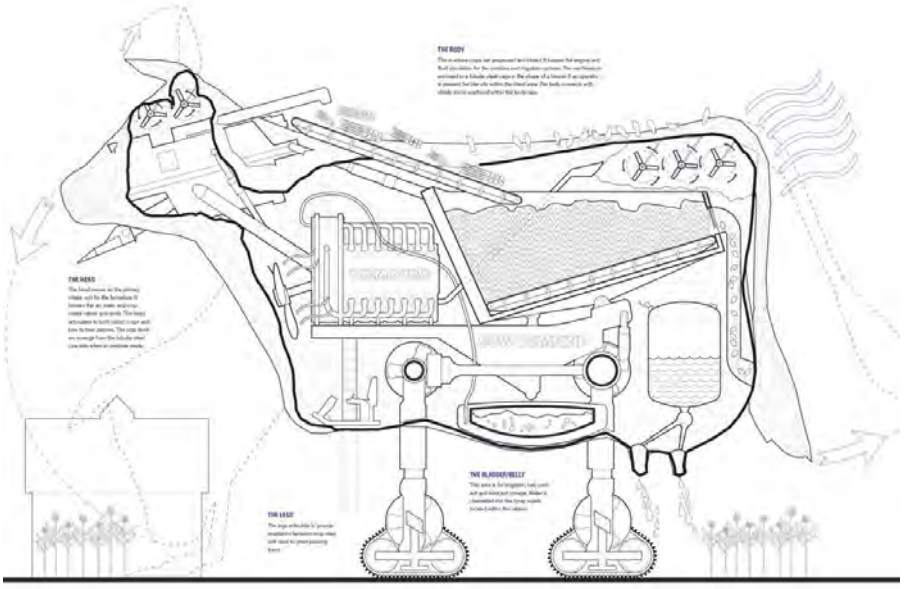
of seasonal food production, and consequent connection to the land from where produce is grown, has dissolved.

The success of the supermarket lies in providing quality and convenience. The supermarket is the only model within the three scales of the food system which offers a variety of produce to consumers daily. It is for this reason that routine shopping takes place at supermarkets rather than markets. Were the distance between farm and table to be shortened, this quality could be achieved without the extensive infrastructure which severs connections between produce and consumer.

New attitudes towards food are apparent in Design With Company's competition entry. Farmland World is an ironic investigation of how humans relate to farm animals. The project looks at how the ongoing spatial separation between humans and the animals they rely on for food makes animals nothing more than utilitarian machines. The everyday life of an average American is almost completely disconnected from the land and animals that support them. Supermarkets are largely responsible for thisAs supermarkets, and other technologies such as internet shopping and freezing, continue to infiltrate communities, this disconnection between produce and the consumer will increase. Fostering this relationship, in the context of regenerating public space, requires encouraging consumers to shop in markets where social interactions occur between farmers, traders and market users. Furthermore, attitudes towards food will only change when there is a greater appreciation and understanding of the food process. By concealing systems, the supermarket does not offer the transparency required to engage the consumer in the process.

The dominance of the supermarket retail type in South Africa means that attitudes have shifted away from seasonality, an important connection to the environment, and the result is food as a utilitarian commodity. Elements of trade, flexibility and interactions are excluded in the supermarket model so, although multiple user groups have access to the produce, the space in which this activity takes place is mundane.





Top left figure 28 Farmland World is a Colorful Eco Amusement Park That Teaches Us About Our Food. Design With Company created a chain of farm-centric eco resorts as a way of commenting on the state of agriculture in America. We rely heavily on automated processes and machines for our food resulting in less contact with the earth and animals. Farmland World was proposed as a way to renew enthusiasm for farming by making it an attraction with rides and farming experience

Top right figure 29 Section through Framland World

Bottom right figure 30 Animal Farmatures, which are human/machine/animal hybrids that transform the landscape. They come in all animal forms and harvest the crops and leave behind manure to fertilise the ground

[http://www.mascontext.com, accessed 28 April 2014]

The Market condition

In contrast to the passive supermarket condition, current niche market trends offer an exciting break from the supermarket dominance. Daily routine food shopping still takes place in supermarkets but the growing interest in urban agriculture and organic 'artisanal' food markets alludes to changing attitudes towards the monotony of mass production encouraged by the supermarket. Be this change a result of sustainability concerns or lifestyle maintenance, to see people engage with food, and the land from which it is grown, is inspiring.

One such market is the Oranjezicht City Farm, which is situated in an affluent suburb in Cape Town. Production, processing, retail, consumption and waste disposal of fresh produce all occur in the same space at the OZCF and

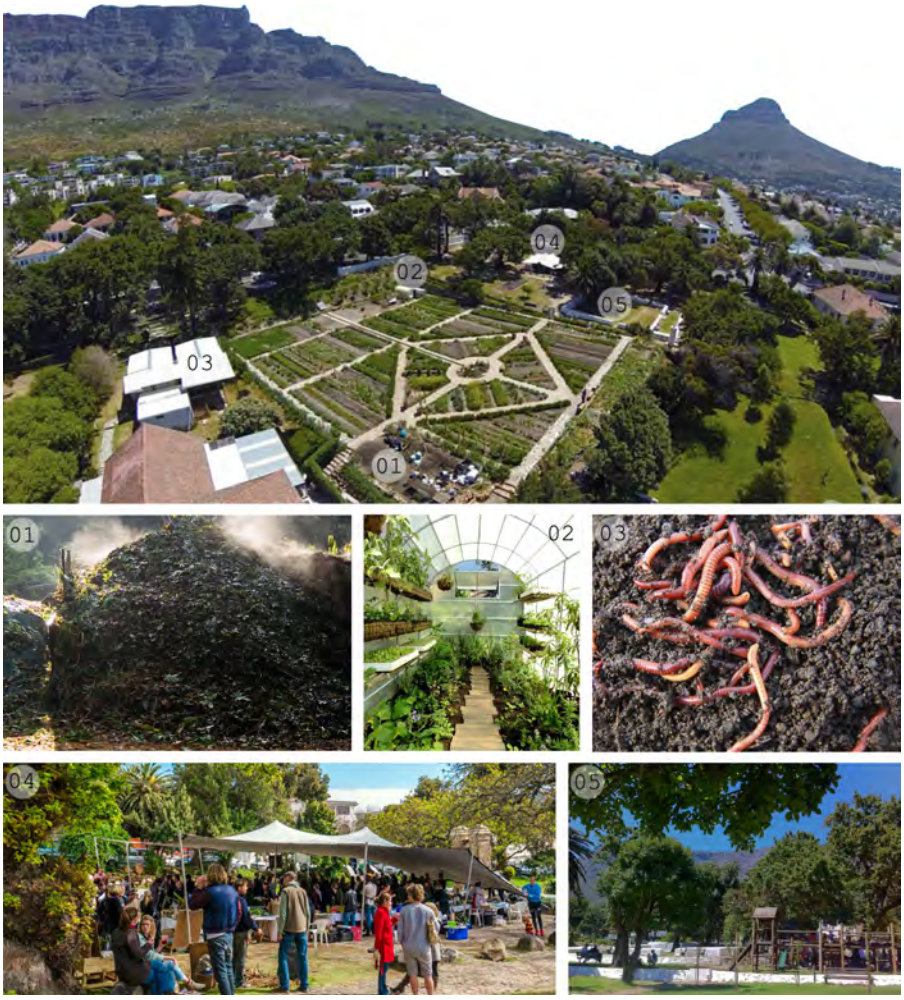


Figure 31. *Aerial View of OZCF and supporting infrastructure [https://www.facebook.com/OZCFarm,accessed 25 April 2014]*

Figure 32. *4.5m x 10m Compost area [http://commons.wikimedia.org,accessed 25 April 2014]*

Figure 33. *2m x 4m Greenhouse for seedling propagation [https://www.facebook.com/OZCFarm, accessed 25 April 2014]*

Figure 34. *Worm Farm [http://healthyurbanhabitat.com.au,accessed 05 May 2014]*

Figure 35. *OZCF Market Day [http://www.ozcf.co.za, accessed 25 April 2014]*

Figure 36. *OZCF Park [http://thearniediaries.files.wordpress.com, accessed 25 April 2014]*

corresponding weekly market.. The market users have direct contact with the urban farm and all obstacles between farm and table are dissolved. The public is able to harvest seasonal produce weekly and engagement between food and the land from which the food is grown is facilitated.

All services supporting the OZCF and market are exposed, unlike the supermarket where processes are concealed. It is this transparency of systems between 'farm and table' that can be extracted from the micro food system model.

The focus of the OZCF is however on demonstration and education rather than viability. This is allowed because of its location in an affluent suburb where community volunteers supplement the running costs and are able to facilitate the programme without remuneration. The new retail type which I am proposing focuses on education through demonstration of processes taking place on one site, but with an emphasis on viability rather than demonstration.

Markets are valuable as public spaces as people need to be brought together in an easy and logical way to facilitate public domain. Food provides this opportunity as everyone needs to eat. The spatial implications of public domain are in providing 'spaces for meeting, confrontation, interaction and exchange.' [Hajer and Reijndorp, 2001] Direct interactions with the farmer, labourers and community members who work the land at the OZCF facilitates social interactions. This is in juxtaposition to the mundane and passive shopping experience offered by the supermarket.

The new market trend is however inaccessible to the masses, as seen at the Neighbourgoods Market and OZCF market. The focus on 'artisanal' produce makes the market exclusive to those who can afford the produce and, since the market only operates weekly, routine shopping even by these users still takes place in the supermarket.

A requirement of the hybrid is a food retail model that accommodates all user groups. The supermarket convenience again comes into play. The supermarket is the only model within the three scales of the food system which offers produce variety to consumers and thus attracts a diversity of users. This will be further investigated in plan and section studies of the hybrid retail and processing space, in conjunction with the configuration of the programme on site and how user groups are accommodated.

Supermarket-market hybrid

New idea about food

The programme of the new typology emerges through a scrutiny of the pros of both the market and supermarket to result in the supermarket-market hybrid. The intention of the hybrid is to re-establish severed connections between farm and table with the objective of changing attitudes towards food. The programme is defined to achieve this: when food becomes more than a utilitarian commodity, shopping in a mundane supermarket will become inadequate.

The ideal emerges from the case studies in the form of a closed loop system, where production, consumption, retail and waste all occur on one site, as seen at OZCF. However, the complexity of the food system, along with the constraints of the site, prevent the system from being entirely closed loop. Were the system to be entirely self-sufficient, there would be no space for flexibility. By supporting external production sources, the importance of small scale organic farmers, such as those in the Philippi Horticultural area, is emphasised. Therefore, the ideal is that the hybrid provides a platform for small scale organic producers, as well as community gardening projects and backyard gardeners to sell their produce. This flexibility arises out of a need to accommodate the variety of both people and produce on which the success of the hybrid depends.

Furthermore the scale of the ideal as provided by the OZCF is manipulated, within the constraints of the site, to facilitate daily routine shopping, product quality and convenience as offered by the supermarket.

figure 37 Diagram of closed-loop programme [by author, 2014]

Production

The choice of production was determined according to available resources such as food waste, which becomes compost, in an effort to keep infrastructure to a minimum and allowing the system to be interdependent. On-site production thus takes place in the form of an intensive urban farm focused on the production of organic leaves and mushrooms. Demonstration soil-based crops will be on site in the form of edible landscaping and green walls to illustrate different scales and methods of urban agriculture.

The amount of produce grown in the greenhouse is determined by the available space allocated to production on site. The size of the site only allows for a limited area for production (in comparison to large scale industrial farms) and the decision was thus to limit the type of production to the most perishable produce, being that of edible leaves, micro greens and herbs. Elaborate infrastructure is required to transport highly perishable goods to retail outlets from farms. This includes expensive packaging and cold storage. By eliminating the space between production and retail, the embodied energy of the produce is hugely reduced, as well as waste figures.

Produce grown on site will service the market and restaurant, and excess will be sold to surrounding wholesalers, retailers and restaurants. Consumers will be able to purchase trays of seedlings and micro greens directly from the production space. In educating market users in production methods, the intention is to

encourage urban agriculture, be it in a back garden or community venture, and encourage conscious eating of organic produce. In creating a change in the food system, and changing the way we feed ourselves, the hope is that the food system becomes more sustainable. (Pollan, 2011)

With regard to the growing method for leaves, it was important to consider that, if the input costs are too astronomical, the system fails. A three tiered stacked tray system on a growing bed was calculated to be the most efficient. The tray system is flexible and if quantities, varieties or produce type need to be manipulated, trays allow for maximum flexibility. The beds are raised above ground and are on wheels, which allows for minimum circulation space between beds as they can be pushed to gain access.

Mushroom production makes use of excess compost made from food waste on site. Growing conditions for mushrooms are basic as they require no light and the space to yield ratio is high.
Receiving produce from external sources is essential to the scheme as it enables further cross-over of people on site, diversity and flexibility. On site production is not sufficient in providing the quality and convenience of variety required to activate the daily retail space. Produce will be delivered to site by either traders or farmers daily. Freshness and quality of produce is key and storage of goods is thus minimised.

Processing

The supermarket offers produce in numerous states for convenience and cost reasons. Processing refers to any further value which is added to raw produce, from basic value added goods, such as chopped vegetables, to ‘artisanal’ produce. Within the context of Woodstock, where numerous user groups co-exist, it is important that produce sold accommodates this diversity as the degree to which value is added affects the cost of produce. The hybrid will provide this variety, but rather than processing occurring in a concealed off-site factory, space is provided on site above the retail space.

figure 38 Distribution of programme in section
[by author, 2014]

With regard to the interconnections between the retail and processing space, produce reaches the processing space via a goods lift from the basement storage and ground floor deliveries. Rentable cold storage and dry storage facilities are provided in the basement.

The floor space in the processing space is divided into a grid of rentable space. Each block within the grid is provided with a water, waste and electricity point. All

infill walls, equipment and further infrastructure are supplied by the tenant. This allows for flexibility and keeps rent to a minimum. These principles of space division and allocation of infrastructure in the processing space mirrored in the retail space.

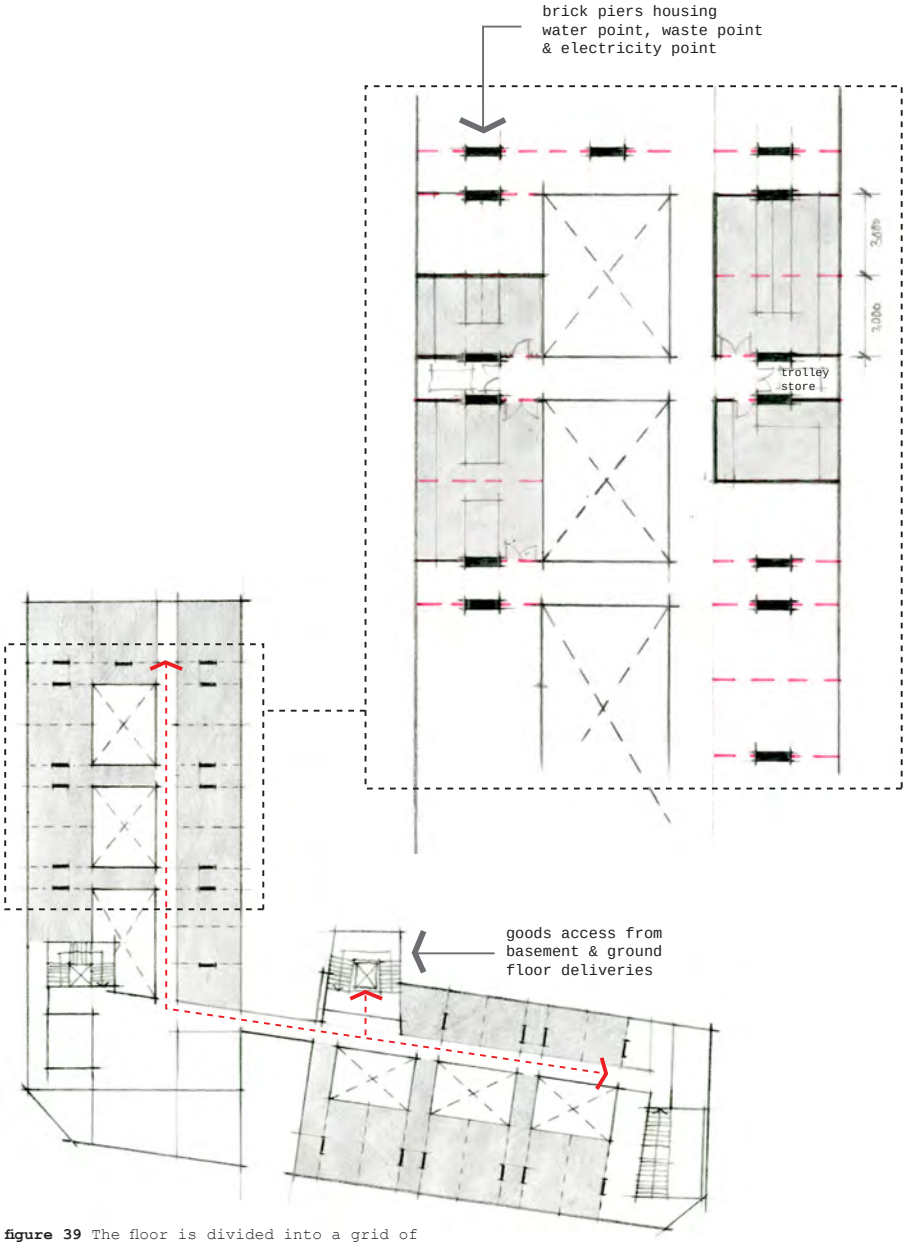


figure 39 The floor is divided into a grid of rentable space and circulation. Tennants are able to rent as many of the squares as required. [by author, 2014]

Retail

The retail space accommodates the daily market. The area allocated to retail was modelled on the Woolworths Food Market flagship store in Somerset West, Waterstone Village. A thorough study was made of this supermarket to determine the allocation and quantity of aisles dedicated to produce types. The intention of allowing the supermarket to inform the variety and quantities of produce required in the hybrid is to ensure that all users in the area are accommodated. The layout of the supermarket aisles, along with responses to street edges, informs the placement of the produce within the retail space in the hybrid.

The presence of individual traders is crucial to establishing relationships between farmer and trader; the trader is able to transfer information from farmer to consumer which further establishes a relationship between consumers and the produce they buy, and the land from which it is grown. The experience of shopping in a market, where interactions take place and relationships are established with traders, in contracs to the passivity of the supermarket, facilitates public domain.

Infrastructure provided in the retail space is similar to that of the processing space, where the floor is divided into a grid. Within the rentable grid, each trader is able to tap into a water, waste and electricity point. Fixed services, such as waste points, additional water and ablutions are housed in service nodes. Fresh produce will arrive at the market daily which means that minimal cold storage is required.

Each trader/tenant is able to design the rented space as desired. Display of fresh produce is crucial in produce retail and, by providing minimal infrastructure, traders are able to design their stalls to best display their goods. Furthermore, the uniqueness of each stall contributes to the experiential quality of shopping in a market in contrast to the mundane supermarket experience.

The intention is that the central open space becomes a temporary market space for weekly markets or events. Periodic markets ‘operate at certain times of the day, week, month or year only. In these situations, the multifunctional use of urban spaces and elements is essential.’ [Dewar & Watson, 1990] Storage, waste, water and electricity points are provided for the temporary stalls to clip onto.

To further facilitate convenience, underground parking is provided to accommodate the influx of daily shoppers. On weekend market days or if an event takes place, the yard at the adjacent Baltic Timbers can be used for spill-over parking. The Neighbourgoods market, located further down Albert Road in Woodstock, provides no off-street parking. The consequence is an influx of cars into the surrounding narrow residential streets and the local residents, who are mostly excluded from the market because of the price of produce, become aggrieved.

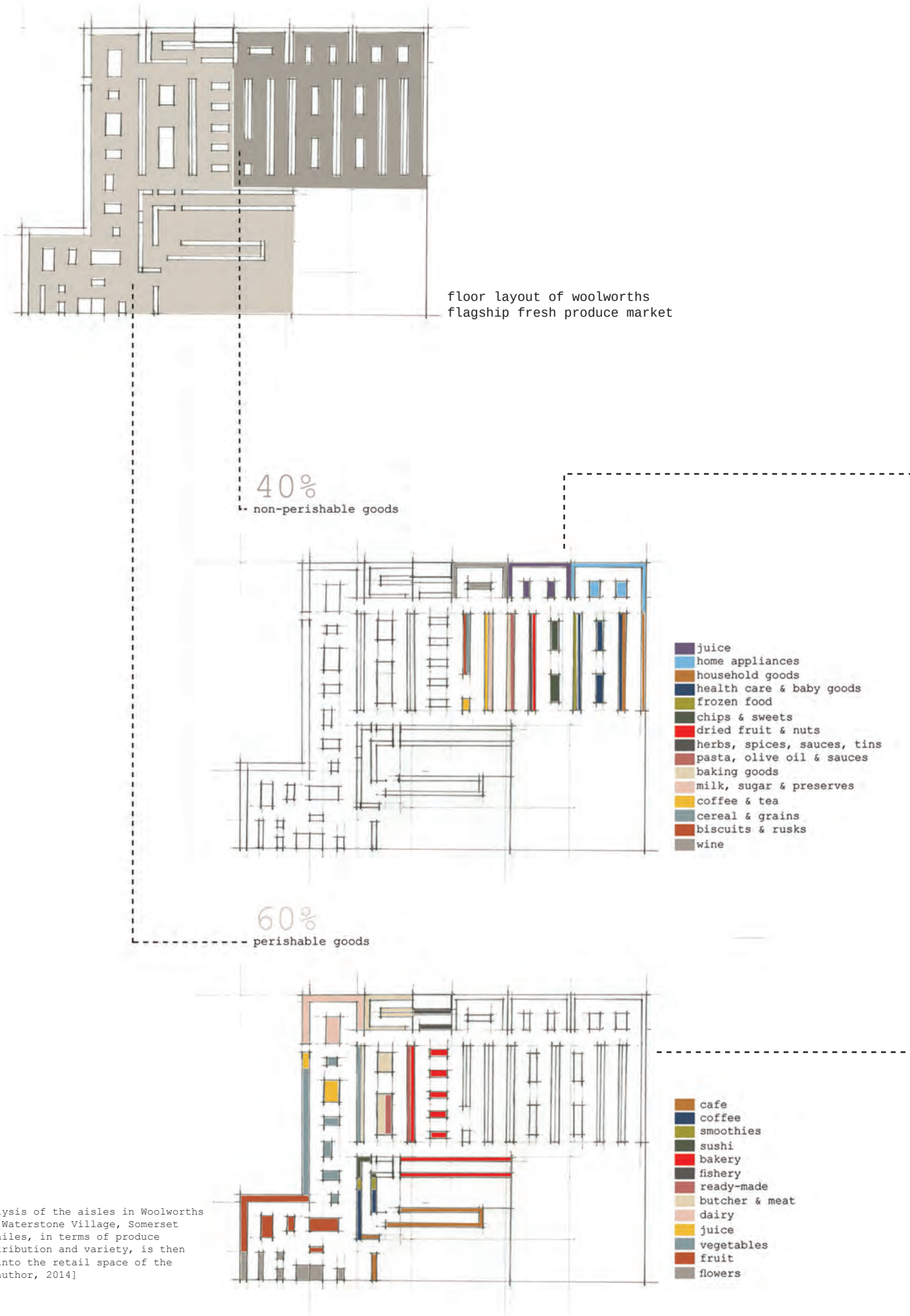
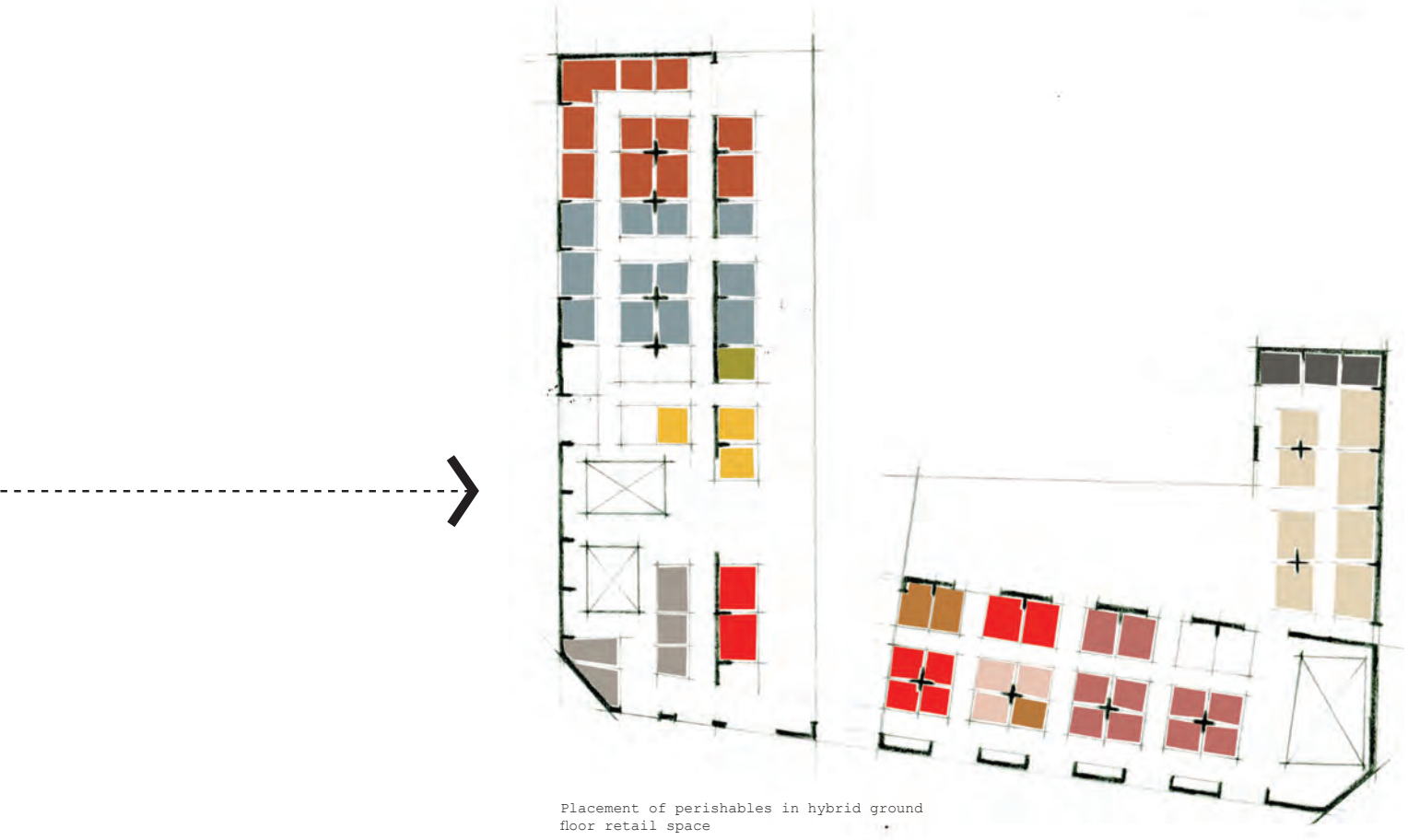


figure 40 Analysis of the aisles in Woolworths Food Market, Waterstone Village, Somerset West. These ailes, in terms of produce quantity distribution and variety, is then transferred into the retail space of the hybrid. [by author, 2014]

Placement of non-perishables in hybrid ground floor retail space



Placement of perishables in hybrid ground floor retail space

Consumption

A variety of consumption spaces are provided for throughout the retail and processing spaces. The overlap of programme is done to create a heightened awareness of where food comes from and facilitate engagement with traders. This is experienced at markets such as the Neighbourgoods Market where tables for eating are placed between market stalls. This is also seen in supermarkets where, for example, Woolworths has incorporated cafes into their food stores and one is able to sample produce sold on shelves.

The on-site restaurant, which overlooks the processing spaces, is the ‘end moment’ to the food production process. All produce served in the restaurant is sourced from the market below and from the on-site production. Produce is fresh, as it arrives on site daily, and the market allows for complete transparency of produce sources and further processing, which occurs in the restaurant in an exposed area.

The infrastructure required for consumption within the processing and retail spaces is minimal (tables and chairs). Stalls which serve ready-made food will spill out onto these consumption areas, be they on the Albert Street edge or on the public square.

Waste

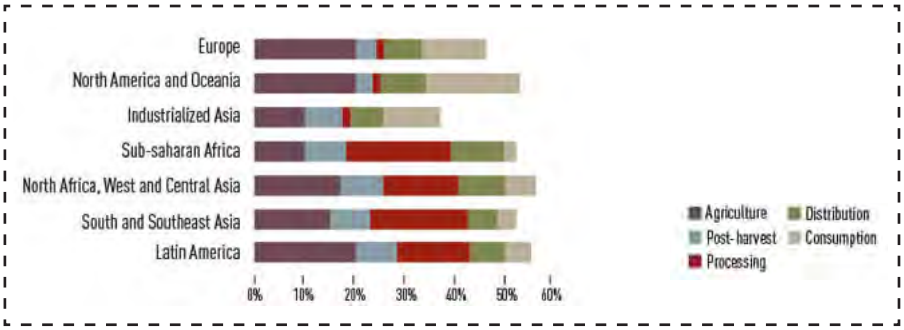
Current food waste statistics are frightening. Supermarkets influence the volume of food waste through their encouragement of industrial eating with ‘buy bulk and save’ and ‘buy two get one free’ campaigns where produce is bought, not because it is needed, but because of the deal.

Calculations were undertaken on the amount of food waste that would be produced by the hybrid’s system to determine how much compost can be generated. All food waste, along with the timber off cuts and saw dust from Baltic Timbers, will be managed on site. Food waste is to become plant food to grow the leaves and mushrooms and excess compost can be sold or traded with the community in exchange for household food waste. Two composting processes are accommodated. The first being the bokashi fermentation process and the second being a worm farm.

All food waste, including animal by-products and cooked waste, which are unable to go directly into a worm farm, goes into the bokashi fermentation process. Bacteria is impregnated into sawdust, which is then sprinkled over the waste. The process, which takes less than two weeks, takes place in a sealed container. Benefits of this process are that minimal greenhouse gases released and there are no odours from the anaerobic process as the system is sealed. From the Bokashi fermentation process, the waste is then transferred to the worm farm.

The worm farm produces vermiliquid and compost, with the compost then used in trays to grow leaves (30 % compost and 70 % woodchips/sawdust) and for mushroom production.

The use of Baltic Timbers' waste is also an important on site process, becoming part of the closed-loop system with all saw dust and woodchips to be used in the waste and production process. Both the bokashi fermentation process and worm farm systems are sealed and therefore no additional infrastructure is required.



Top: figure 41 World wide food waste figures [http://www.worldbank.org, accessed 05 October 2014]

Bottom: figure 42 Bar graph illustrating where in the system food is wasted, and how this is distributed between developed and developing countries. [http://www.fao.org, accessed 05 October 2014]

Analysis of hybrid programme

By illustrating all processes between farm and table, the distance between produce and consumer is dissolved. Infrastructure, such as extensive cold storage and concealed delivery areas, becomes irrelevant and transparency of all processes between produce and consumer is enabled. A gallery route, which will be further elaborated on, facilitates engagement with all processes along the cycle.

This spatial change in the nature of food retail will have a social implication, as evident in the change from market to supermarket. The chosen site for the hybrid is in lower Woodstock, wherea diversity of user groups exists, and through the use of food as a design tool, the opportunity to facilitate interactions between all users arises.

The daily shopping experience offered by the hybrid will be in contrast to the passivity of the supermarket. An analogy was made during a crit between this proposed food machine and a bustling medieval village square. This alludes to Breugel's paintings of countless activities taking place in one space and countless different people sharing one space. If the programme manages to achieve this, I believe a public domain will transpire.

Figure 43 Pieter Bruegel's The Fight Between Carnival and Lent, 1559. A busy market square is illustrated with countless numbers of activities taking place in one space. [http://www.kingsacademy.com, accessed 10 May 2014]

04. SITE

Facilitating the flows of people and produce
Locating the project in Woodstock

Baltic Timbers is located at the end of the public transport link between the MyCiti stop, the Esplanade station and the Woodstock Station. From here pedestrian traffic disperses into Woodstock and bypasses the site to access Main Road, Woodstock. The intention is to capture this pedestrian traffic and draw commuters through the site.

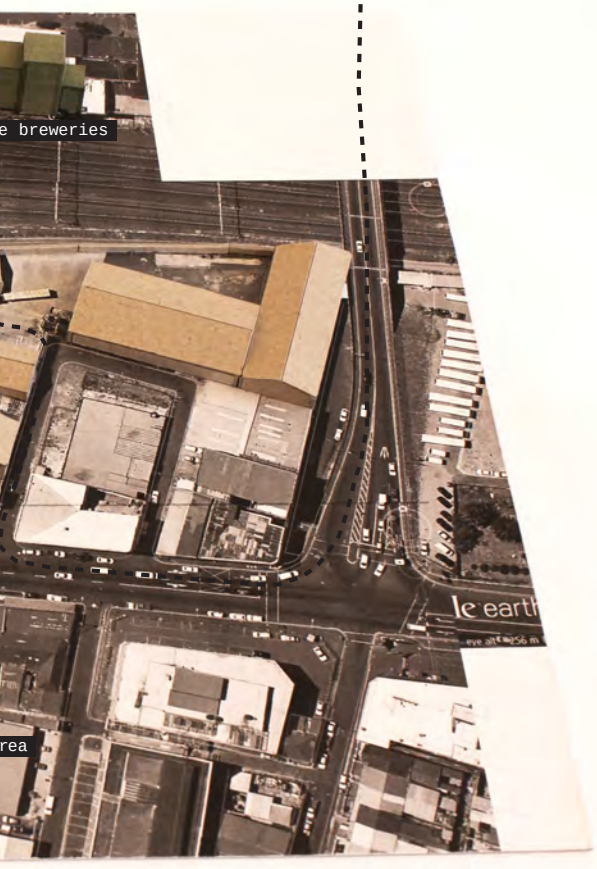
From Albert Road, on which the site fronts, produce is able to access the site via Lower Church Street, which links onto the N1. This ease of access allows for goods delivery to be efficient while keeping traffic congestion to a minimum.

The success of the hybrid is dependent on its location as this determines both access of people and produce. The project was located in Woodstock because of the existing overlap of users and the unique density in the area. Despite the privatisation of public spaces, Hajer and Reijdorp remain optimistic about public spaces existing in contemporary society. They identify that, for public domain to exist, there needs to be an 'exchange' which takes place between different user groups, where the 'different groups become attached to a particular place and somehow or other reach a compromise'. [Hajer and Reijndorp, 2001]

figure 44 Location of Baltic Timbers, my chosen site, in Lower Woodstock, Cape Town [Google Earth, 2014]

figure 45 Facilitating the flows of people and produce [by author, 2014]

produce accesses site via
the N1



All factors allowing for plurality exist in Woodstock, but no particular space/activity facilitates the cross-over of the area users. There are three dominant user groups in the area of the chosen site: the daily commuters, the local residents and the 'yuppies' occupying the Woodstock Exchange and similar gentrified developments. Each of the groups occupies the area at different times of the day. The intention is that the market is activated daily, rather than being a destination or event market, and the constant activation of the area and flux of people is thus empirical.

A secondary factor influencing the choice of site was the need for a site large enough to accommodate the processes of the hybrid. Baltic Timbers is within a commercial area, with industry to the north and residential areas to the south of the site. Woodstock appears as a good intermediate between the dense CBD and industrial areas, in terms of land affordability and a site which provides a diversity of users.

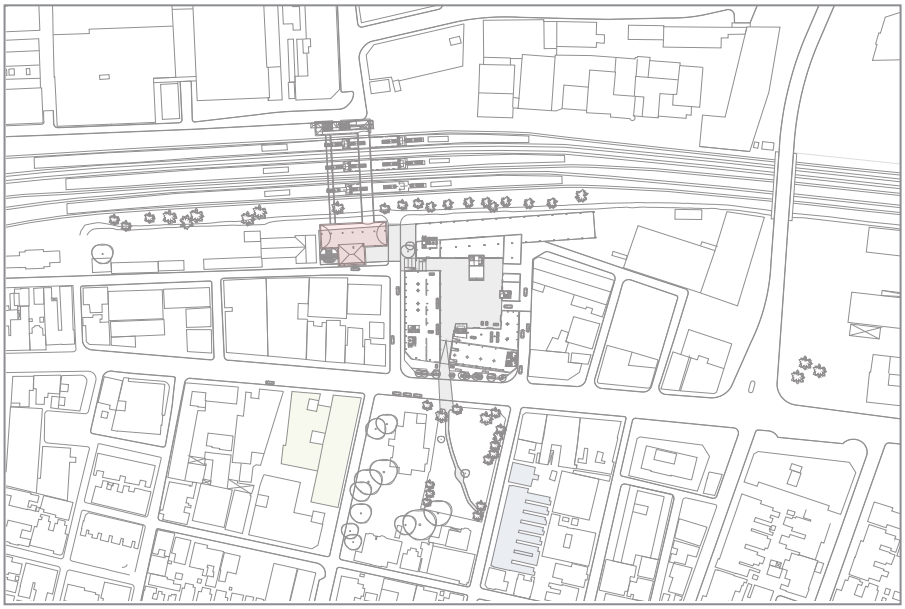


figure 46 Red represents the Woodstock Station, blue the local housing, and green the Woodstock Exchange [by author, 2014]

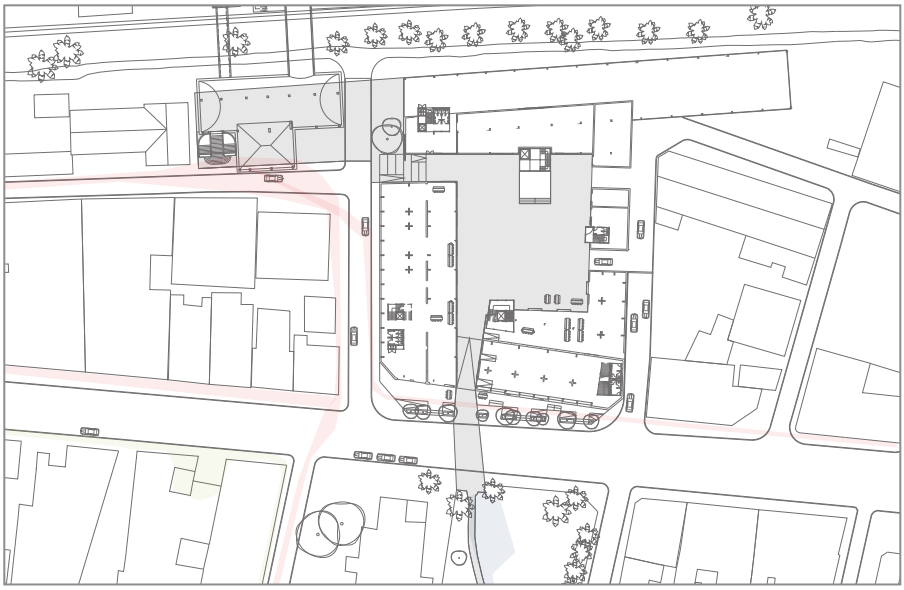


figure 47 Commuters from the station (red) travel alongside Baltic Timbers and disperse into Woodstock. The Woodstock exchange users (green), and similar middle income users from surrounding developments, drive to the Woodstock Exchange and do not venture far beyond their destination.

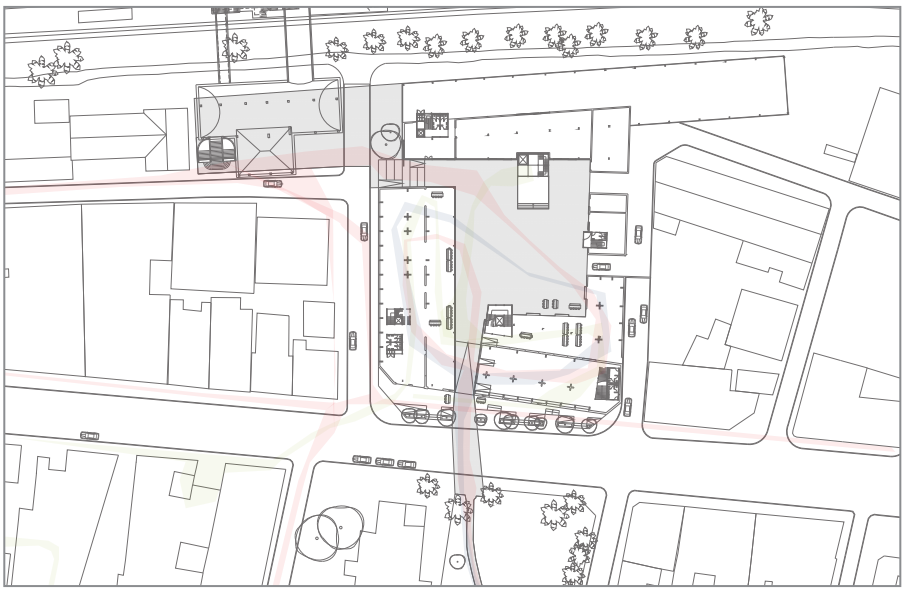


figure 48 The corner facing the station is opened and commuters are offered an alternative route through the site. Underground parking is provided which encourages a diversity of users on site. The hybrid is in walking distance of the lower Woodstock residential area.

Configuration of programme on site

cross-programming

In contrast to the socio-spatial polarisation of the network city, where functions were strategically separated, the configuration of the programme of the hybrid on site is done in such a way to facilitate the overlap of users. The relationship between the different programmes, within the closed-loop system (production, processing, retail, consumption and waste), and their placement on site in response to the context, is done to achieve maximum cross-over of users in a logical way.

Each of the components of the programme within the food machine employ and attract different users. The spectrum of users ranges from management, farmers, labourers, tenants and traders to consumers. Opportunity for exchange to take place is facilitated by the cross programming of spaces. The intention is to create a space where multiple users can make a portion of the site their own. The hybrid provides a ‘public’ space where exchanges between the ‘other’ can take place.

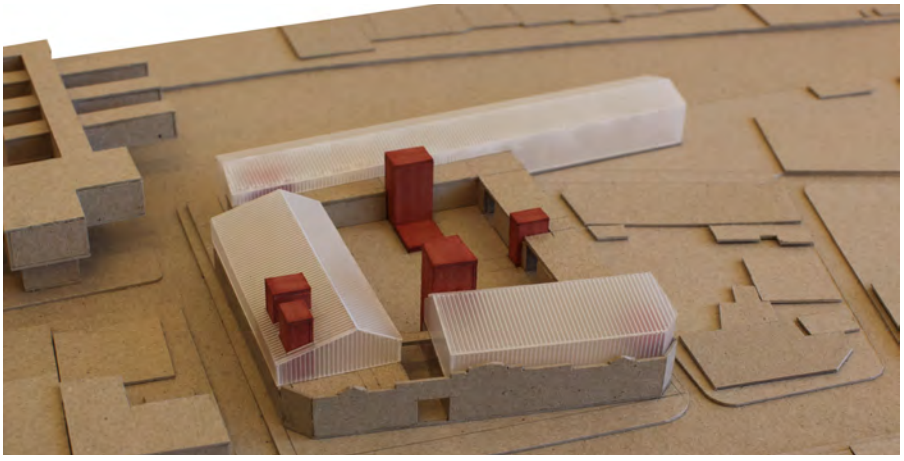


figure 49 Model of proposed scheme in context
[by author, 2014]

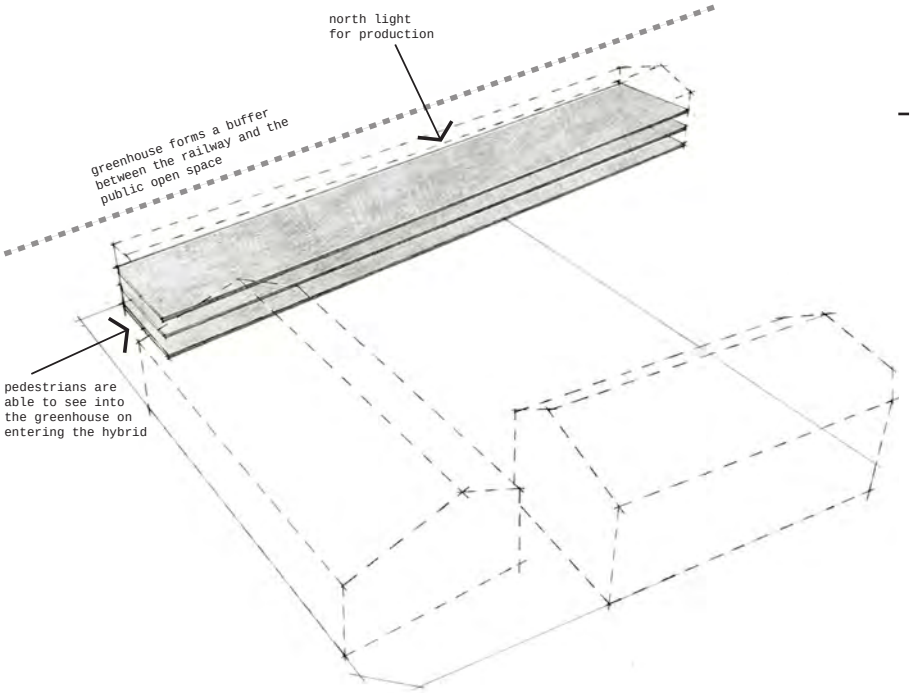


figure 50 Sketch diagram of production space
[by author, 2014]

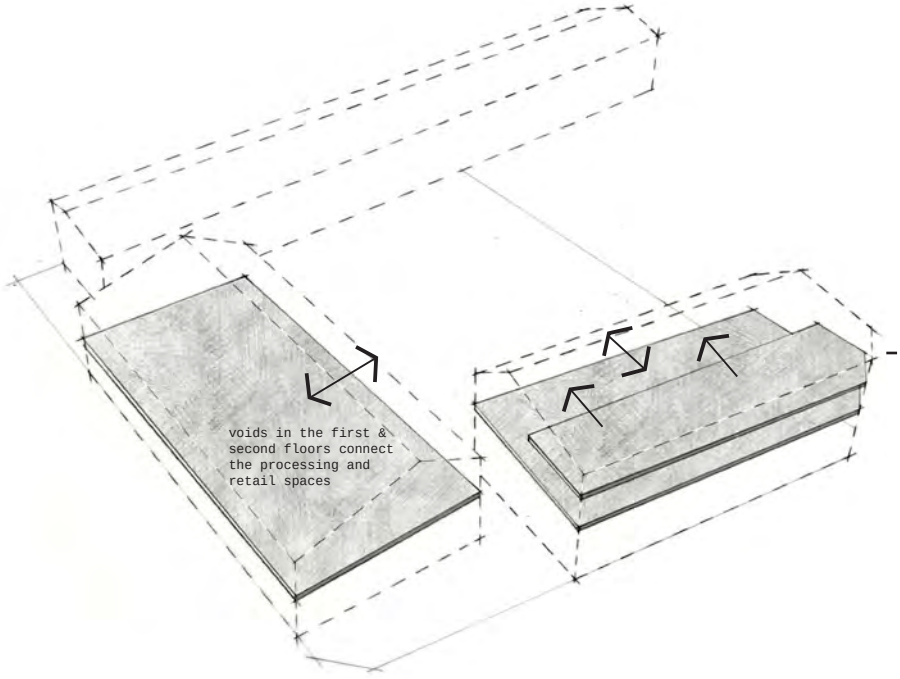


figure 51 Sketch diagram of processing space
[by author, 2014]

Production

This will take place along the north edge between the railway and site as production requires sun light. The greenhouse will create a buffer between the dirt and noise of the railway and the internal public space. The infill brickwork and corrugated sheeting of the existing portal frame, which currently functions as an under-utilised wood store, will be removed and replaced with glass to create a greenhouse.

Processing

This will be above the retail space, both of which will be exposed systems to ensure a transparent relationship and interconnectedness between retail and processing.

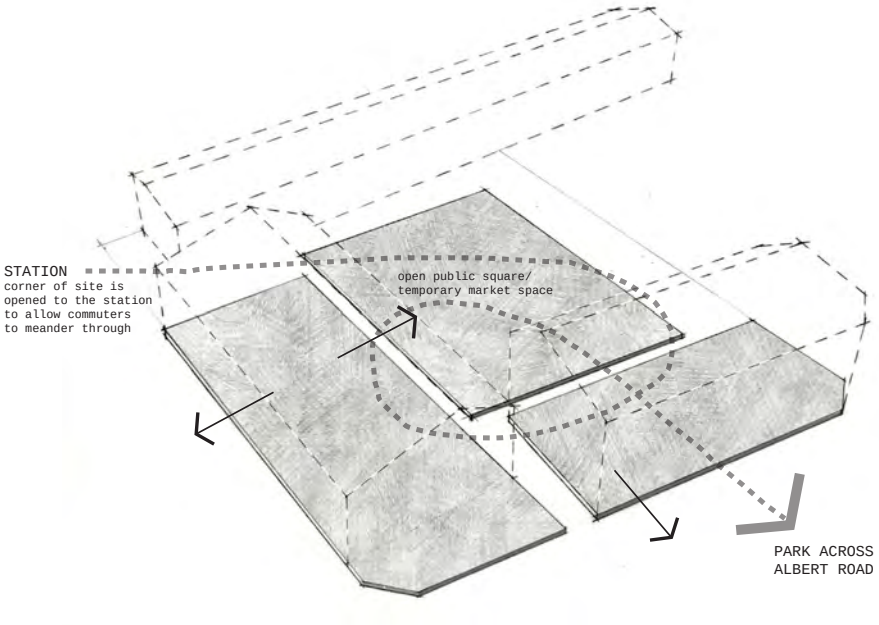


figure 52 Sketch diagram of retail space [by author, 2014]

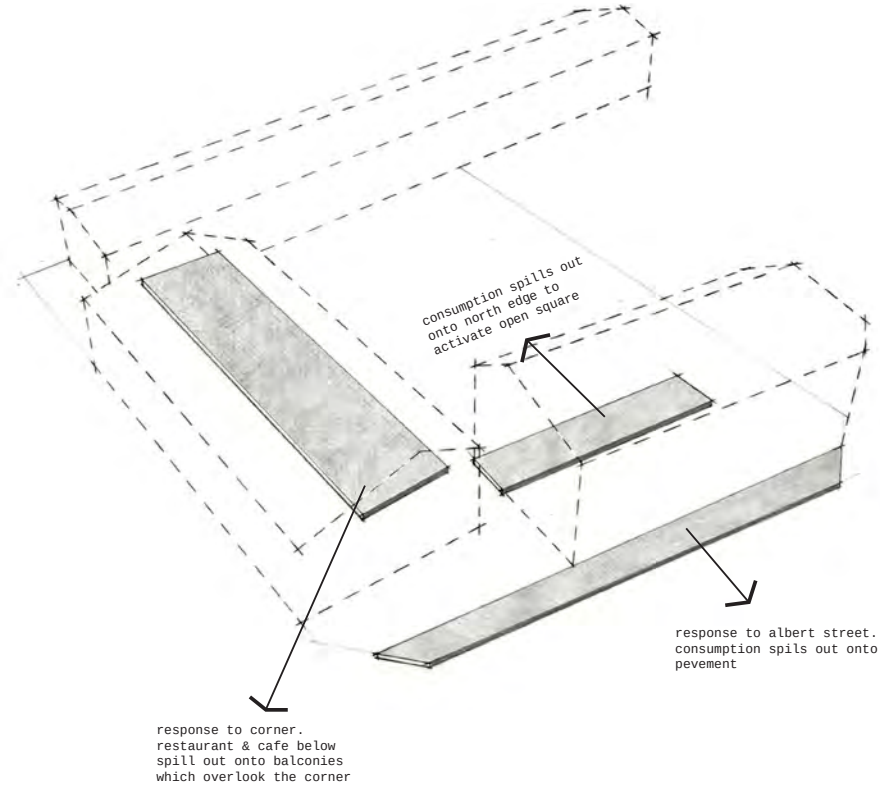


figure 53 Sketch diagram of consumption spaces [by author, 2014]

Retail

Retail is located on the ground floor to ensure a response to the street edge, drawing in foot traffic from commuters between the station and Woodstock and capitalising on existing movement patterns. Commuters will be offered an alternative route to their current route, which runs between the station and Albert Road, alongside Baltic Timbers on Davison Road. This alternative route allows commuters to meander through the site, engage with the processes, continue through the market space and emerge onto Albert Road. The intention of the scheme is that the ground floor becomes an extension of the park on Albert Road opposite the site, and an extension of the proposed open public space that links the station to the hybrid.

Consumption

Consumption is located within the retail and processing spaces, with the restaurant above the processing space. Consumptions spills out onto both the south street edge (Albert Road) and the central public open space. Shops on Albert Street currently open onto the pavement. Second hand and furniture shops and cafes litter the streets. The intention is to continue the nature of this urban edge across the site.

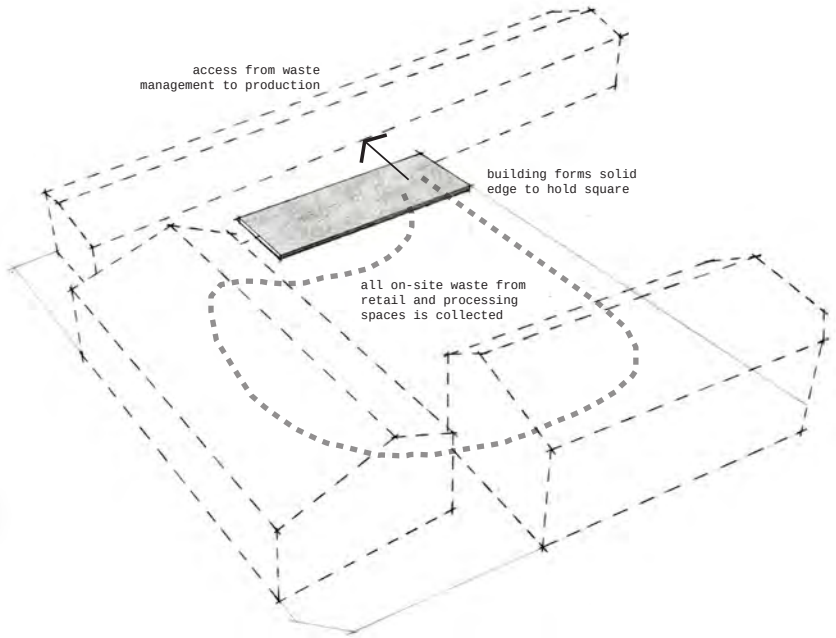


figure 54 Sketch diagram of waste management space [by author, 2014]

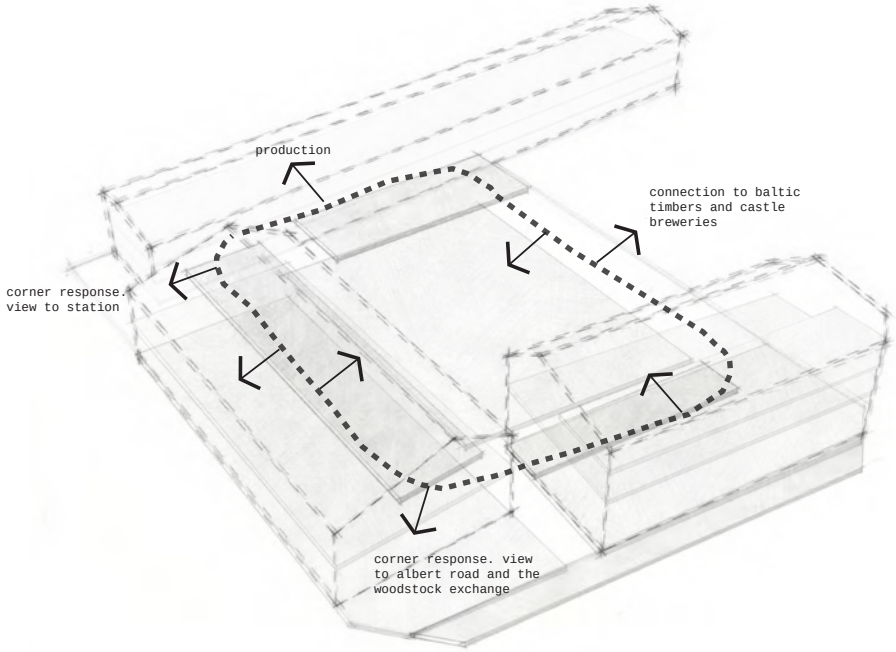


figure 55 Sketch diagram of 'gallery route' around site [by author, 2014]

Waste

Waste management is located in close proximity to the production space. Waste management takes place within a sealed building, and the placement of waste thus forms a hard edge facing onto the open public space ceating a sense of enclosure.

Gallery route

The programme components are linked by an elevated gallery type route which wraps around the site on first floor level. The route, which is above the ground plane, moves through the processes allowing spectators to engage with the entire food cycle and enhance their connection with food. This provides an experiential quality into each process and accommodates the educational aspect of the hybrid.

05. DESIGN STRATEGY

Response to existing

The infrastructure of the hybrid, which is determined by the relationship between fixed and temporary services analysed in the case studies of the macro, meso and micro food system models, focuses on providing the basic minimum infrastructure to activate the model. The reason for this is to achieve maximum flexibility.

The variability of both people and produce, due to seasonality and movement, requires a market that accommodates this flexibility. Furthermore, by providing only the basic minimum infrastructure, the rentable space will be affordable, and thus cater to a diversity of traders. This prevents the possibility of the market becoming another niche 'artisanal' market.

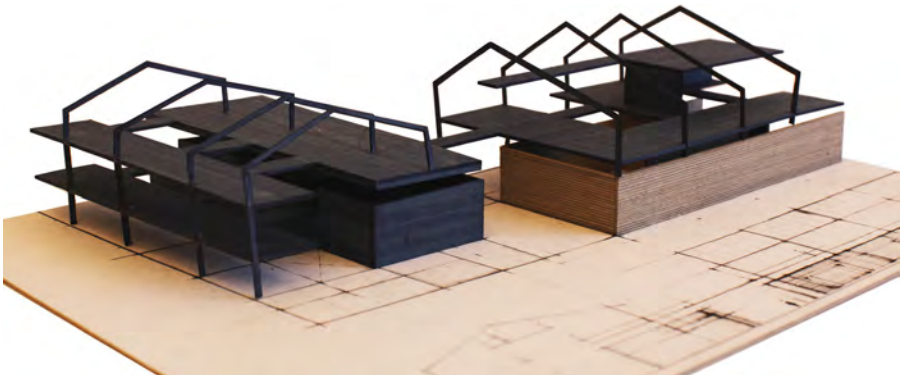


figure 56 Model of tectonic exlporations [by author, 2014]

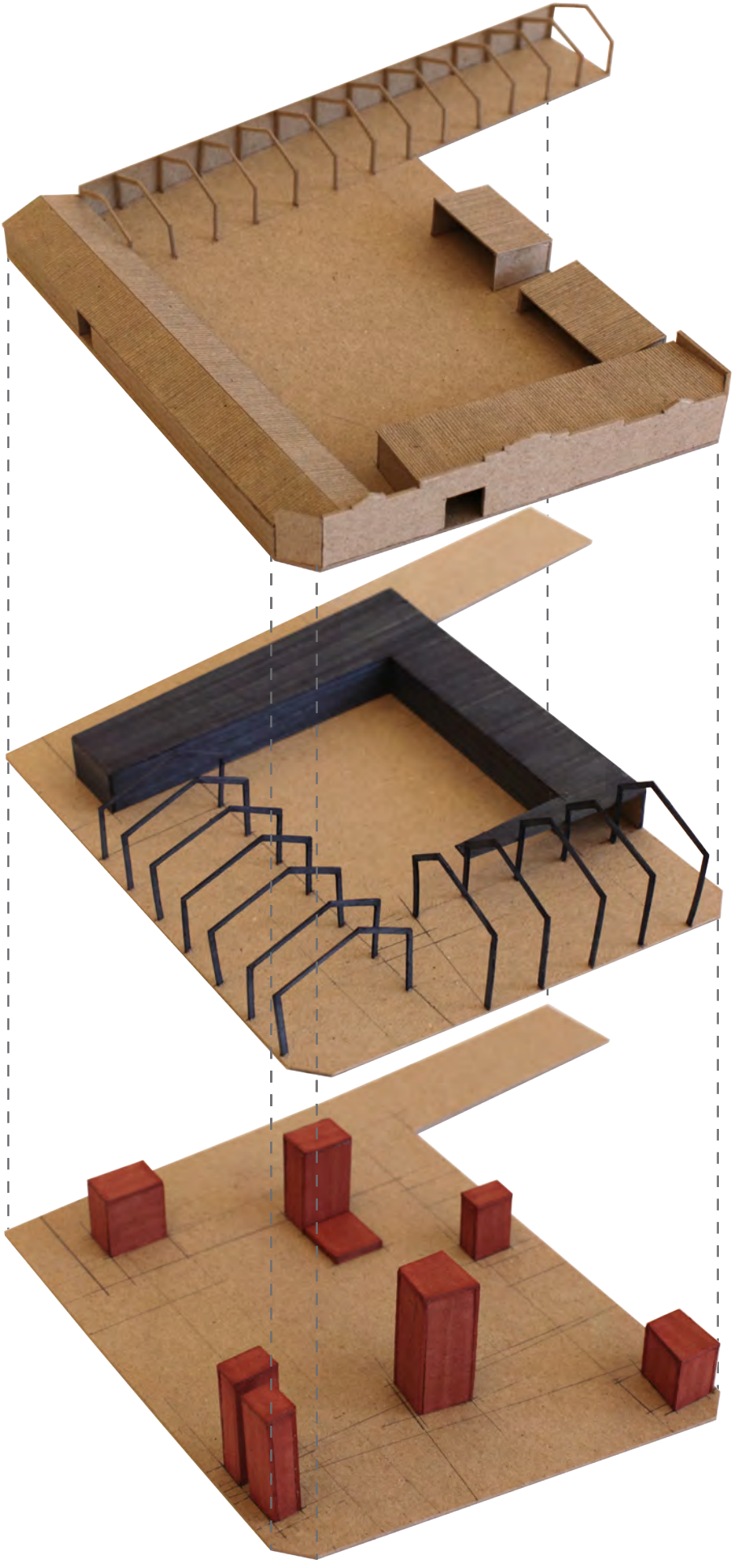


figure 57 Model of existing buildings on site [by author, 2014]

figure 58 Model of additional portal frames and buildings forming a soild edge onto the central public open space [by author, 2014]

figure 59 Model of infrastructure nodes [by author, 2014]

The scheme looks at inserting the basic minimum infrastructure required to activate the site as a food machine. For this reason, as many of the existing buildings as possible have been retained. Timber suppliers, Baltic Timbers, currently occupies the large site in lower Woodstock. An eclectic mix of shed-like buildings, which have been manipulated over time, surround a large open yard in the centre of the site. Currently Baltic Timbers unterutilises the existing buildings and site in general. The strategy is to condense Baltic Timbers on a portion of the site which would make both Baltic Timbers and the site more efficient.

The amount of existing floor space is however insufficient to house the required programme. Additions to the existing are juxtaposed against the brick load bearing construction of the majority of the existing buildings.

Concepts of transparency and exposed systems result in a tectonic expression which is lightweight in nature, through which all happenings are visible. This lightweight, shed-like nature of the additions further responds to the industrial context and the processes taking place within the buildings. An existing building on site, located on the north edge, is a steel portal frame. The lightweight additions mimic this language. Portal frame construction also allows for flexibility of floor plates within the volume. This language is appropriate in facilitating interconnectedness between levels to allow for transparency of processes.

Infrastructure nodes, which house all fixed services, are then located within the existing buildings and additions. All fixed services are contained within these nodes to facilitate flexibility around and between the nodes. Key analysis of the infrastructure nodes is to follow.

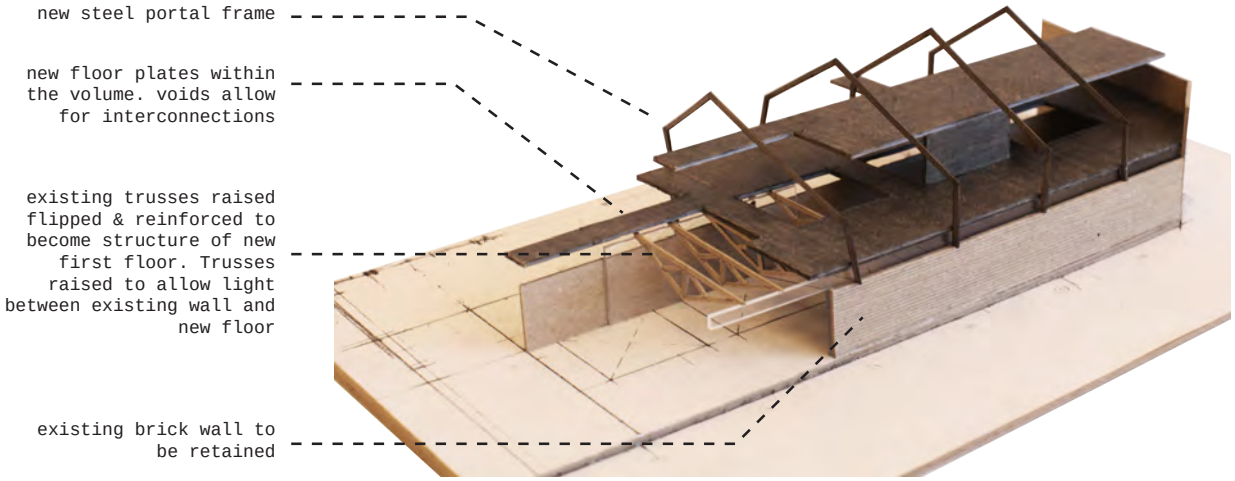


figure 60 Diagrammatic model illustrating the tectonics of the new and existing [by author, 2014]

figure 61 Brick wall between Woodstock Station and Albert Road is retained. Punctures, through which traders can sell produce, will be made in the wall. [Photograph by author, 2014]

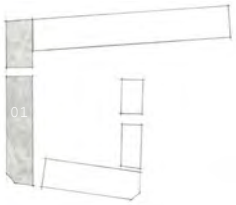


figure 62 The front faceade is retained. Currently, the facade does not correlate with the buildings behind. New openings in the facade will open the retail space to Albert Road and opposite park. By making openings in the front facade, the intention is that the internal open public space becomes an extension of the park. [Google Maps, 2014]

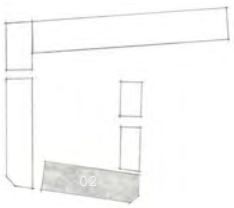


figure 63 The existing portal frame is to be retained and reappropriated as a greenhouse. The sheeting and infill brickwork will be removed and replace with translucent/glass infill panels. [Photograph by author, 2014]

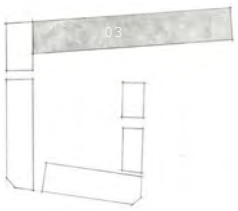
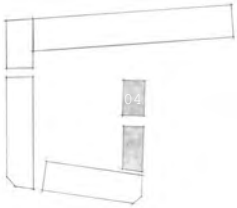
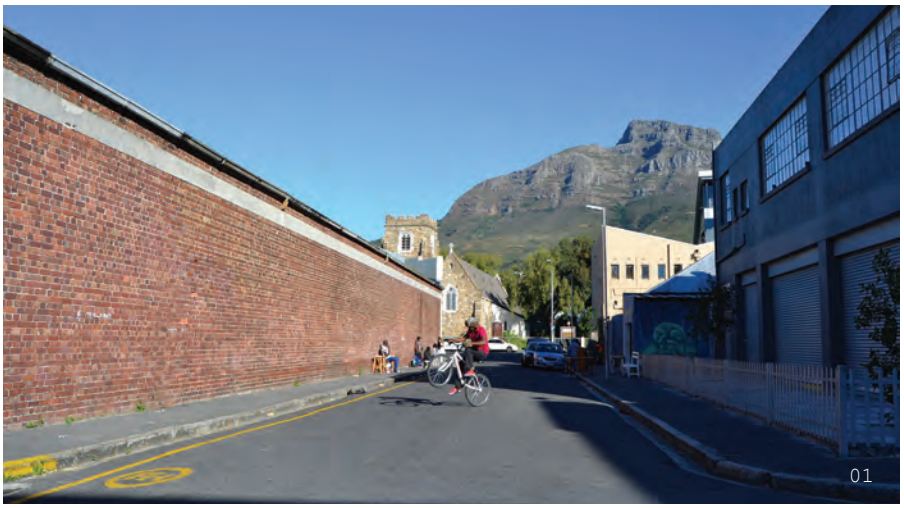


figure 64 The brick walls of two wood storage areas will be retained. The roofs and corrogated sheeting walls will be removed. These buildings are to form part of the solid edge, along with the waste management area, which holds the open public space. [Google Maps, 2014]




01

02

03

04

Infrastructure nodes

An early model explores the relationship between massing, into which services are carved, the in between public space/marketplace, which is defined by an overhead grid, and a route navigating through the spaces with moments of pause/ engagement.

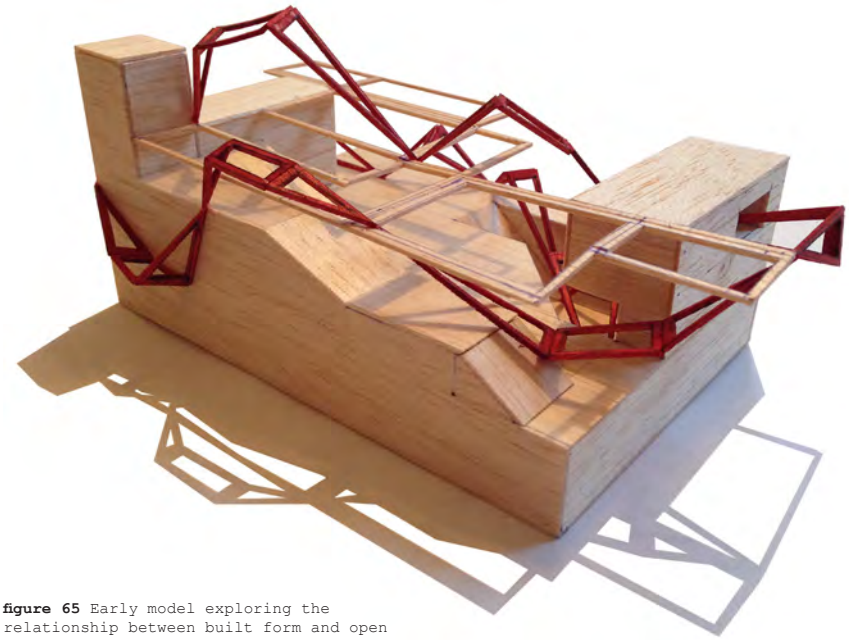


figure 65 Early model exploring the relationship between built form and open space and the nature of the inbetween space created and consequent movement [by author, 2014]

This concept of services being fixed, and potentially carved, within existing buildings has remained prominent throughout the design. The basic minimum services required to activate the programme are thus housed in nodes around which become legibility beacons. The response towards services and their expression has developed through the investigation of rekindling the relationship between produce and consumer. The outcome is the need for transparency of services to allow all processes along the food cycle to be exposed. Services are thus exposed.

The tectonics of the infrastructure nodes represents this transparency. Construction is lightweight to allow for maximum flexibility and adaptability. The architecture

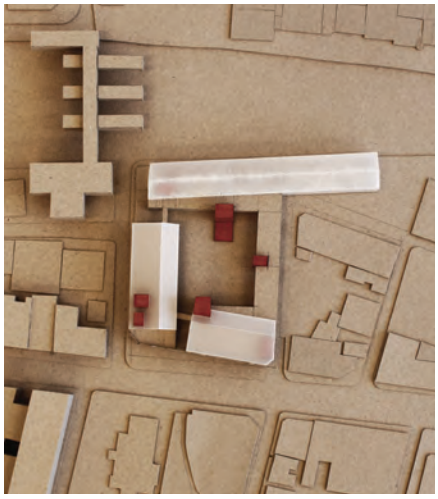
of the nodes however needs to differ from that of the lightweight additions to the existing buildings. The steel of the additions is contrasted by the timber construction of the infrastructure nodes. The use of timber creates a contrast between these moments, on which the whole hybrid relies, and the industrial context. Furthermore, the timber makes reference to Baltic Timbers and the concept of a closed-loop system is emphasised.

A further exercise separates the three components, of which the model is composed, into a tetris-like game where the blocks can be arranged into numerous configurations and relationships between the components set up different spatial networks. The placement of the infrastructure nodes within the existing and additions is strategic. The spatiality of services is explored. By housing the services in nodes, they are able to be strategically placed to activate the programme that surrounds them.

figure 66 Configuration of elements establishes differing spatial relationships between the parts [by author, 2014]

The nodes house a series of systems: circulation, energy and services. The amount of services (waste storage, water points, electric points, storage and ablutions) is dependent on the position of the node on site and the programme which requires activating surrounding the node.

The infrastructure nodes represent a greater metaphor of a series of food machines being inserted into the city that will activate change in the food system and activate public space. Perhaps the supermarket could even become redundant.



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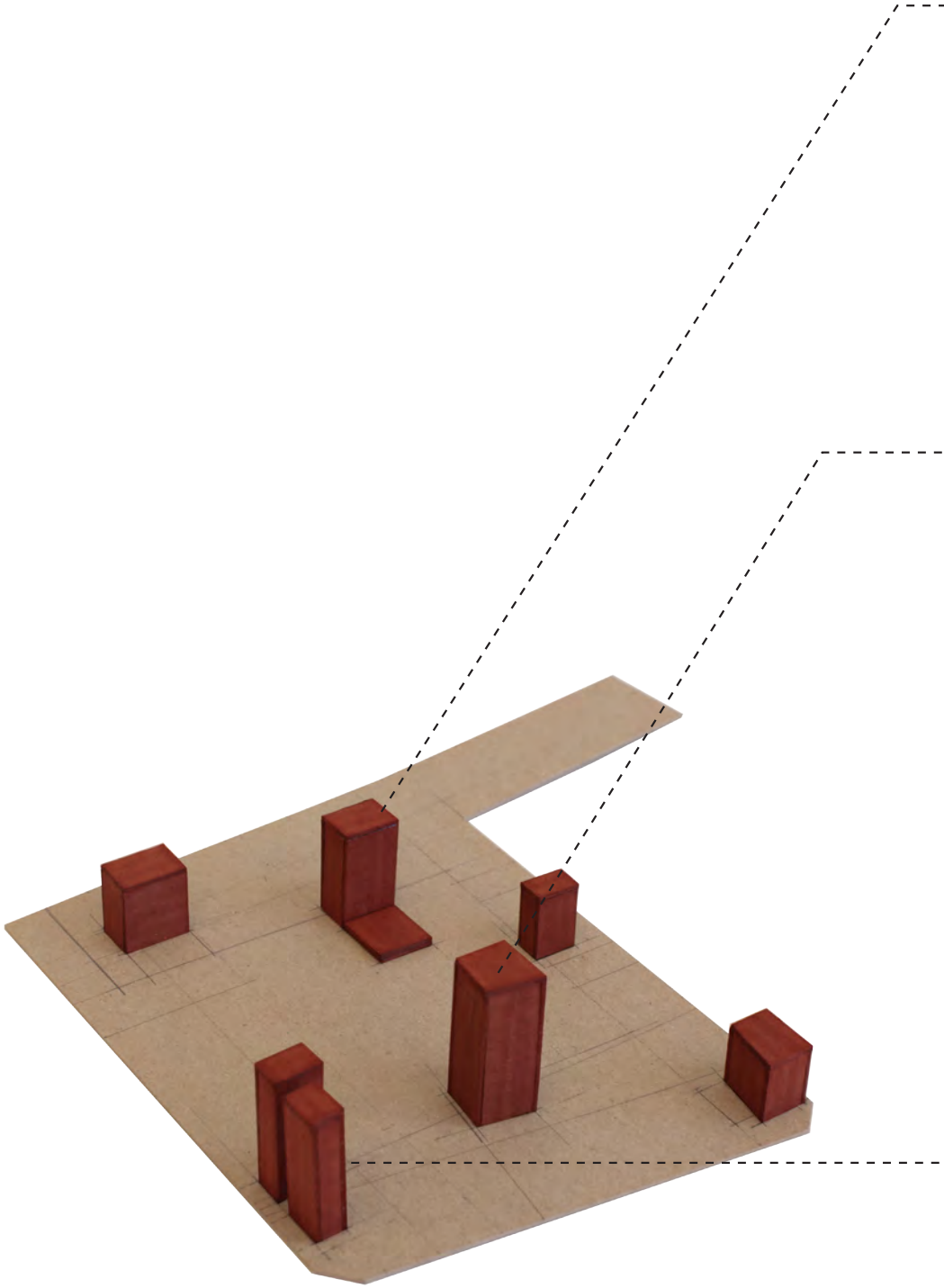

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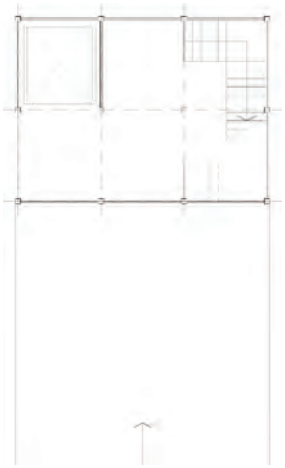
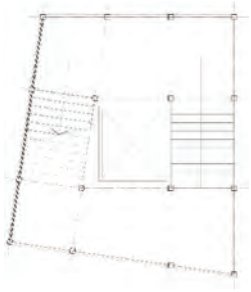


Node activating public open space

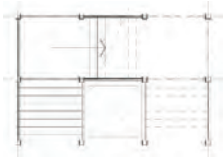
Public access from basement (lift & stairs) takes place via the node. Once on ground floor, the position of the node, which faces onto the open square, enages the user with activities on site. Furthmore, the position of the node guides communters from the station towards the retail space and dissolves the through access to relocated Baltic Timbers.

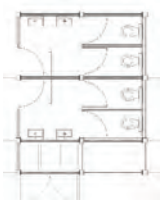
A stage, which opens to the public space, clips onto the front of the node.



Node avtivating processing space & public open space

Goods access from basement storage (cold & dry) and ground floor deliveries, takes place via the node. A goods lift and staircase is porovided. Access to the basement is controlled and public users only have access to the node from ground floor upwards.

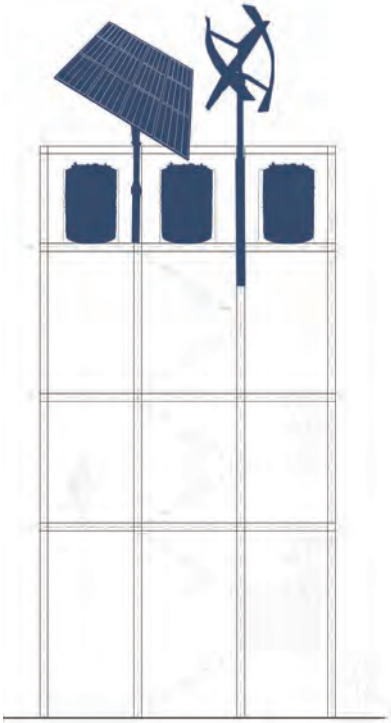




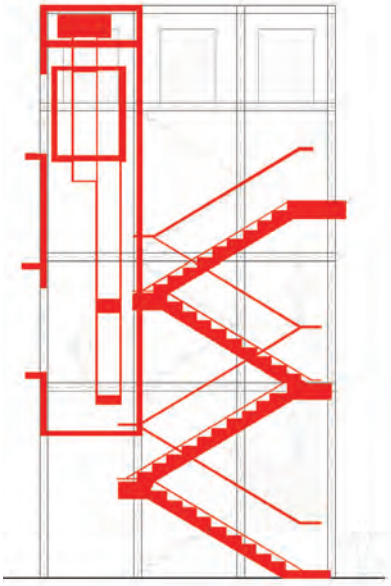
Node activating retail space

Circulation includes a staircase and lift which move from ground floor retail, through first floor processing, to the restaurant on the second floor.

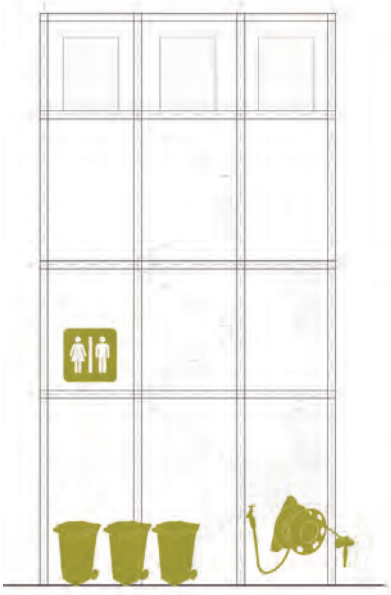
Ablutinos, water, waste and electricity points are included in the node. The nature of trade which takes place in this portion of the site requires minimal infrastructure and traders thus use communal ammenities.



Energy systems
Energy systems include rain water storage tanks, wind turbines and solar panels. To reinforce the idea of a closed loop system, all sources of energy on site are harvested and used to run the building.



Circulation systems
All circulation between levels takes place via the nodes. The nodes act as legibility beacons.



Service systems
The nature and degree of services differs between nodes due to the particular programme surrounding the node and the services required to activate the programme.

Services include waste storage, water points, electricity points and ablutions.

figure 69 Analysis of energy, circulation and service systems of the nodes [by author, 2014]

06. CONCLUSION

The project began with a theoretical inquiry into the use of food as a design tool to facilitate urban regeneration. How food is bought and sold in cities plays a crucial role in transforming the physical shape of cities and the facilitation of public domain. The programme and siting of the new typology, which is modeled on the pros of both the supermarket and market, aims to achieve this through cross-programming the farm-to-table system on one site, and through the accommodation of all area users.

In re-establishing the connection between produce and consumer, through the closed-loop programme of the hybrid, a change in attitude towards food, where food becomes more than a utilitarian commodity, will, it is hoped, transpire. With a shift in attitude towards food, the food we buy, and where we buy it from, food can be used to foster urban renewal. With spatial change comes social change.

The hybrid typology marks a moment of pause; a moment where a change in environment can create a change in behaviour.

Sarah catches the MyCiti bus to Woodstock to meet her vegetable trader who's promised the seasons best artichokes. Its early evening and she sits at the coffee bar facing onto the public square and watches the skateboarders compete with commuters for benches.

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A

B

farm storage

lift

wc

showers

compost store

packing lettuce trays

sawdust store

mushroom farm

bokashi fermentation process: week 2

floor drain

worm farm

bokashi fermentation process: week 1

sawdust store

waste drop

trade store

waste management

bicycle parking

security/ control

farm workshop

fertigation room (vermiliquid & water)

waste drop/ public compost collection

public access to basement parking

stage

trolley store

temporary market storage/ stage equipment/ event tent

wc

pivot hatch opening over

floor drain

retail
pivot hatch opening over
pivot hatch opening over
lift
female wc
male wc
waste
water
bicycle parking
pivot-up entrance door over
Line of temporary tent over
goods lift
private access to basement storage
floor drain
consumption
retail
retail
waste
female wc
male wc
A

ground floor plan
scale 1:100

A

B

B

1.5m rf
skylight over

parking

access
control

produce in

dry
storage

goods
lift

cold
storage

produce out

A

basement plan
scale 1:200

A

B

B

A

void

storage/
quality
control

gallery
route

processing
space

trolley
store

goods
lift

consumption
space/cafe

processing
space

processing
space

first floor plan

scale 1:200

A

B

B

void

restaurant

void

void

goods lift

void

void

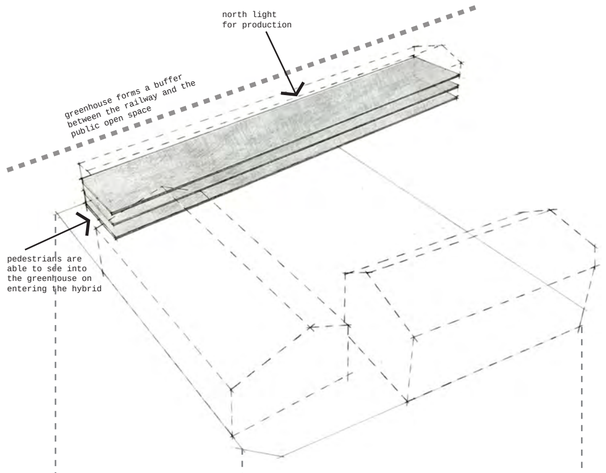
void

processing space

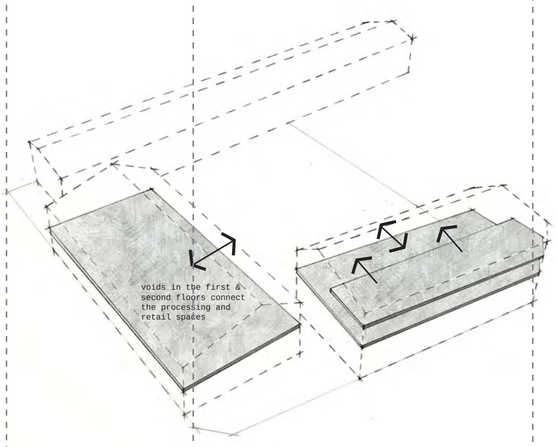
A

second floor plan
scale 1:200

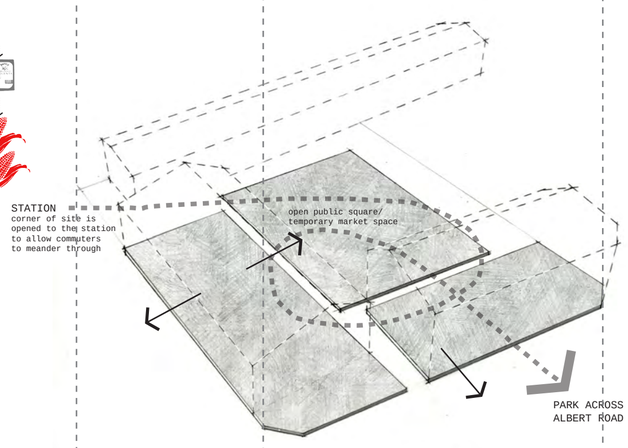
production



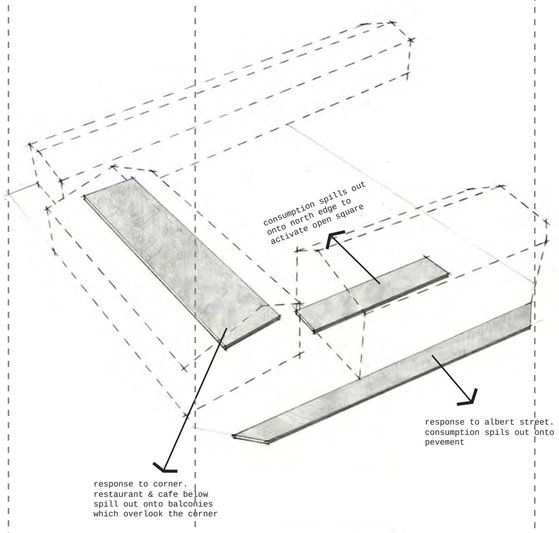
processing



retail



consumption



waste

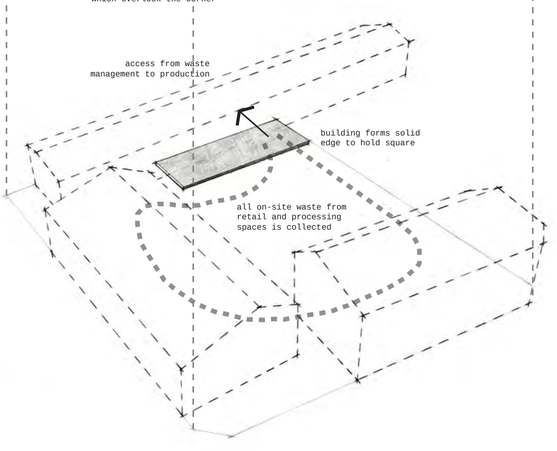
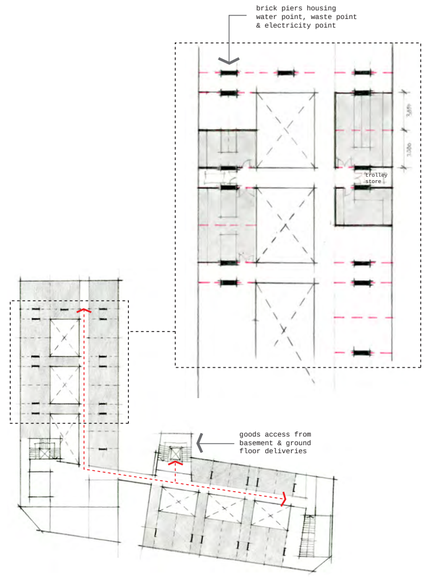
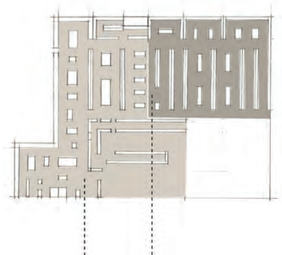


diagram of processing space

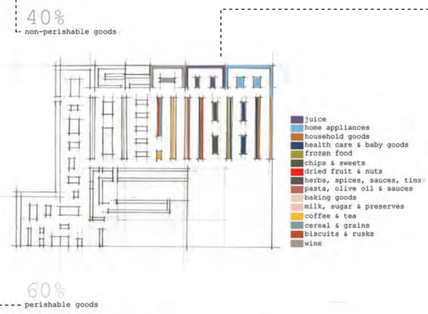


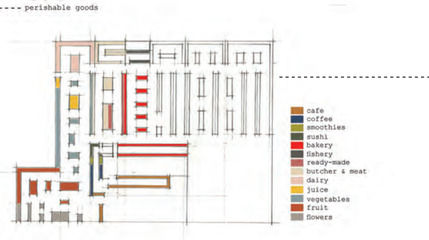
The floor is divided into a grid of rentable space and circulation. Tennants are able to rent as many of the squares as required.

analysis of retail space



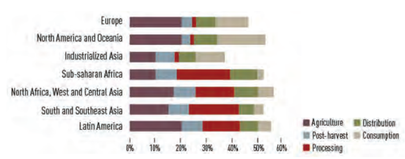
floor layout of woolworths
flagship fresh produce market





Analysis of the aisles in Woolworths Food Market, Waterstone Village, Somerset West. These ailes, in terms of produce quantity distribution and variety, is then transferred into the retail space of the hybrid.

current waste statistics

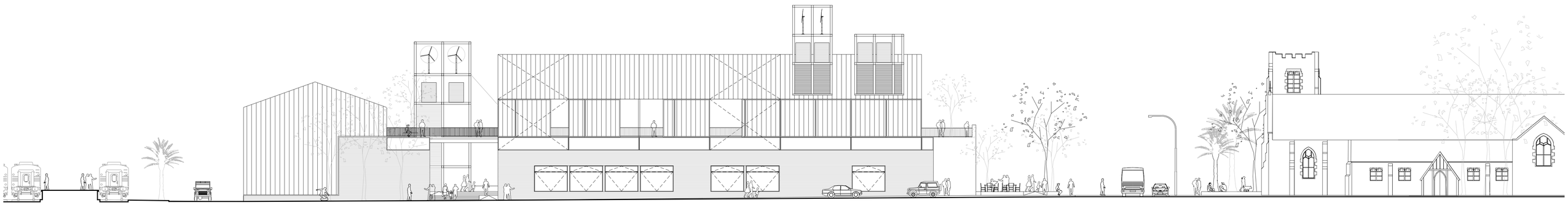


Bar graph illustrating where in the system food is wasted, and how this is distributed between developed and developing countries.

closed-loop programme

configuration of programme on site

albert road elevation
scale 1:200



davidson road elevation
scale 1:200

albert road perspective
response to corner

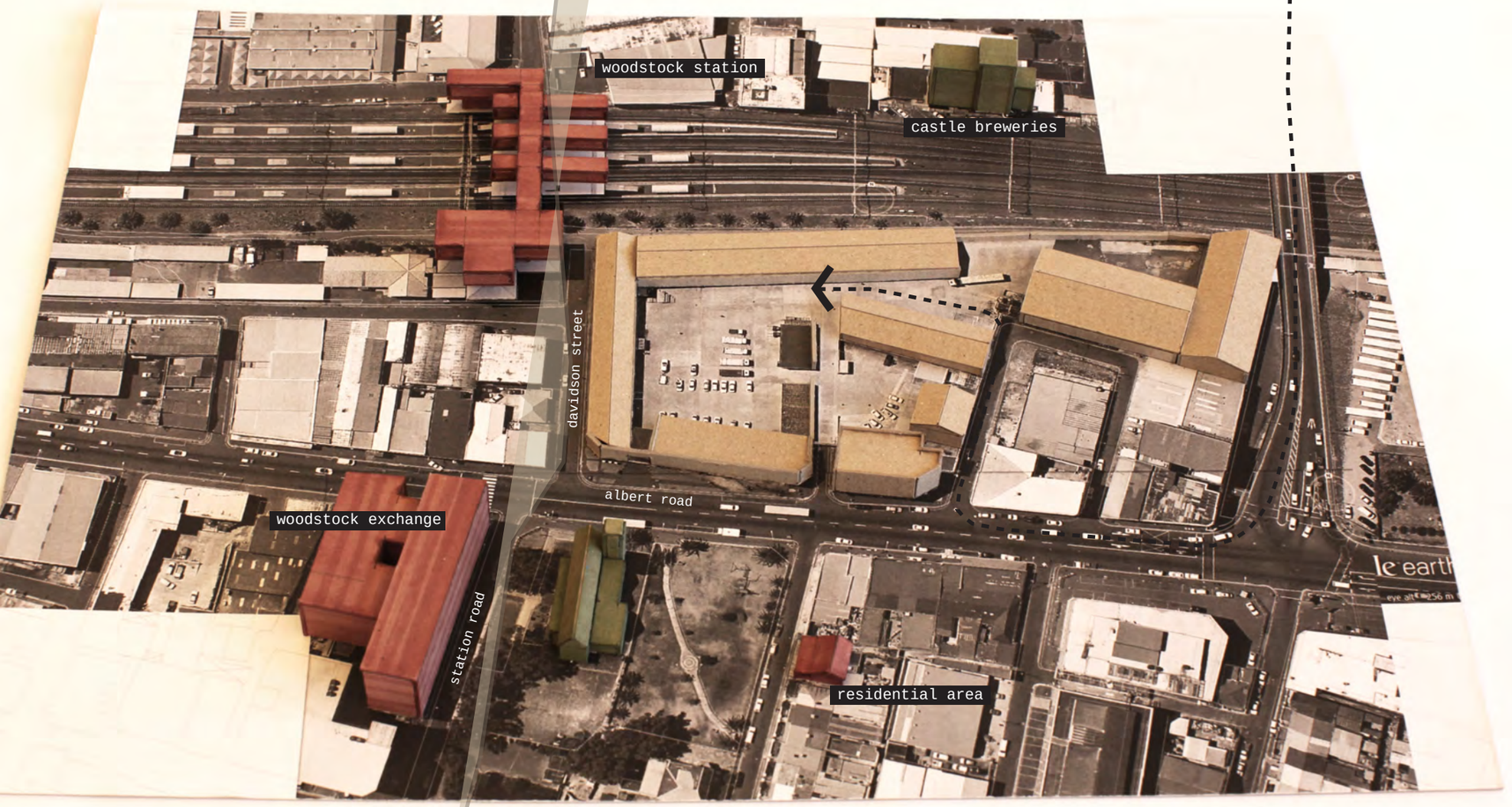
entrance perspective
from woodstock station

to harbour

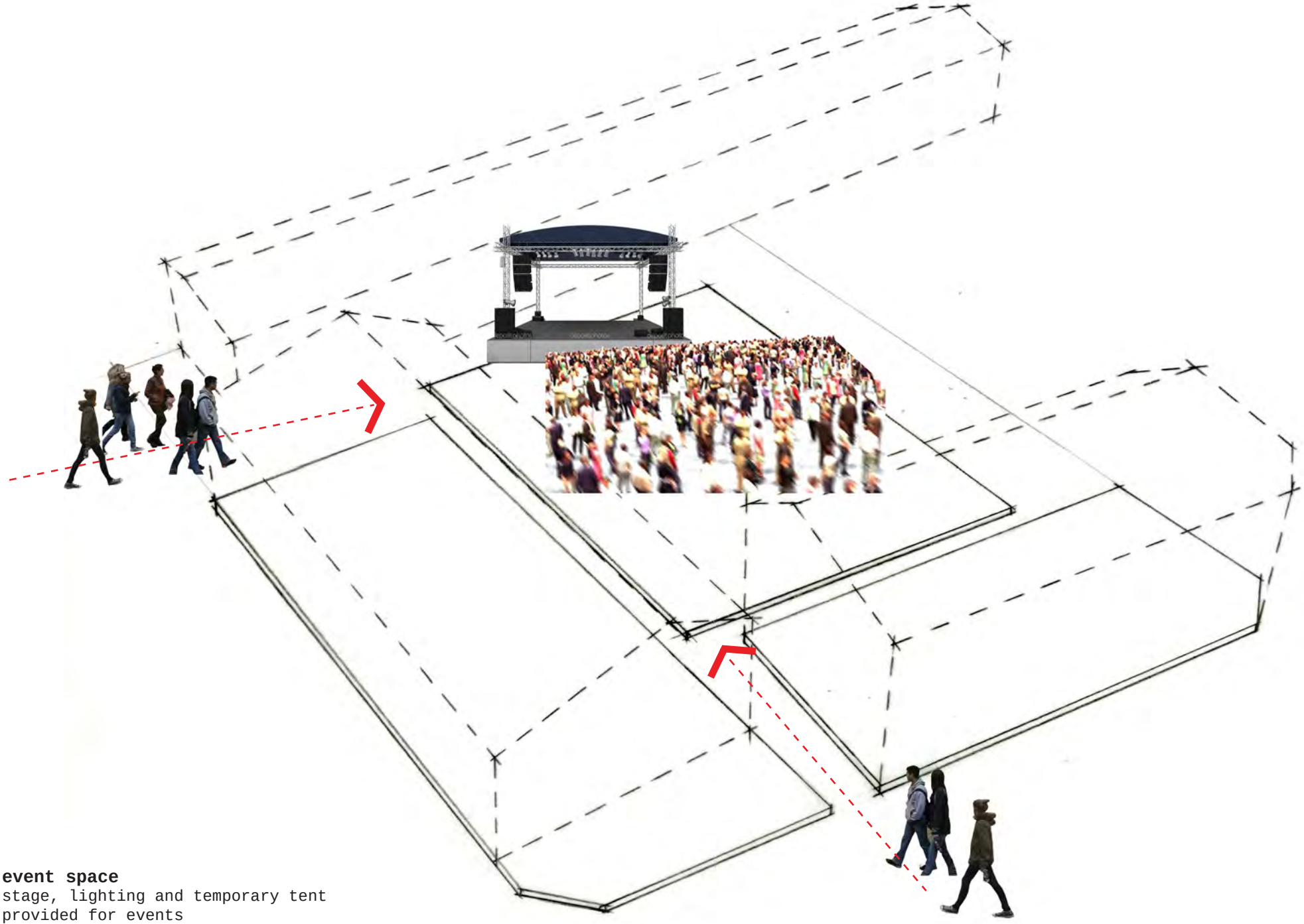
myciti bus stop
commuters from BRT station

esplanade train station
commuters are linked via a bridge between the BRT stop and the esplanade station

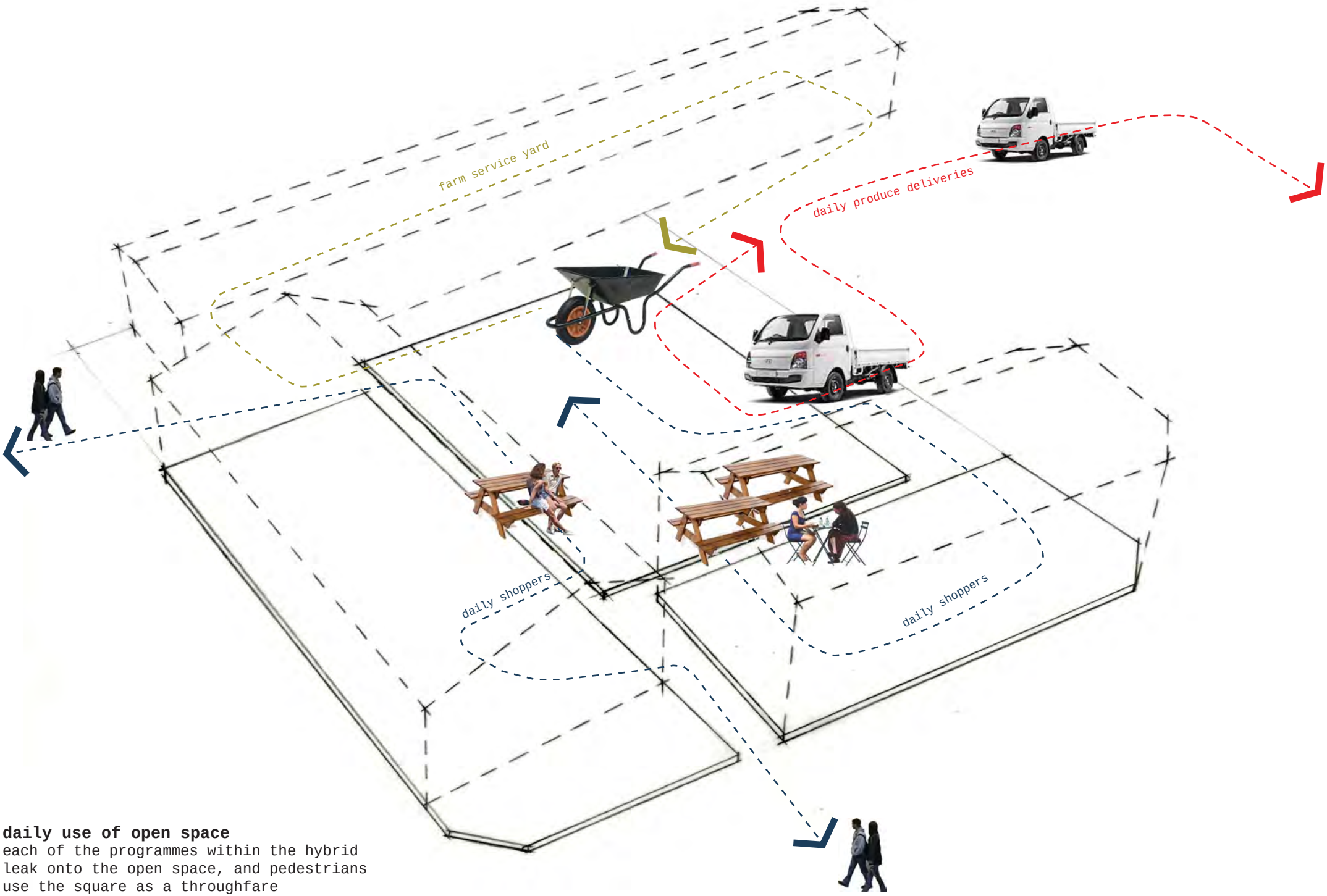
produce accesses site via the N1



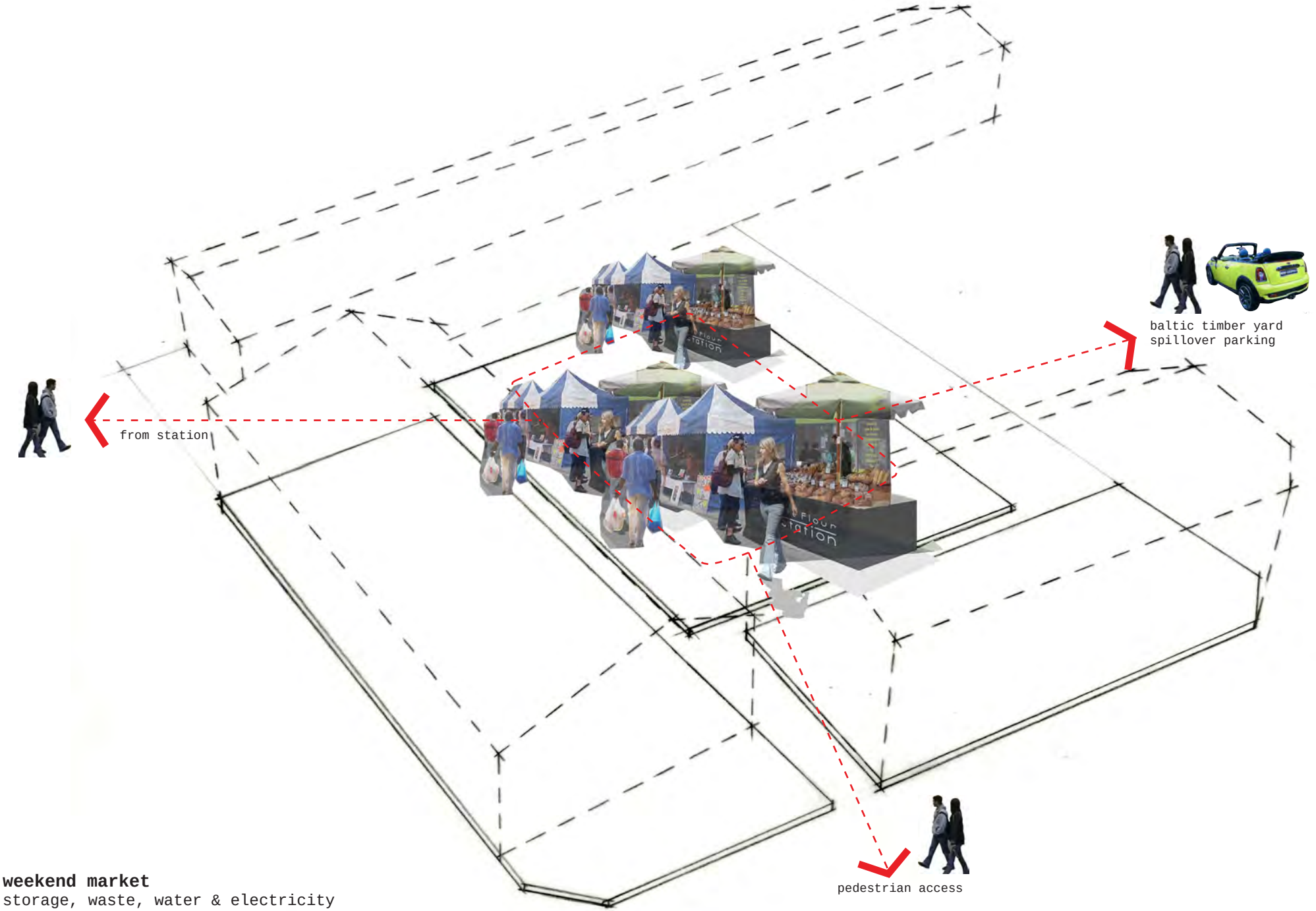
to woodstock main road



event space
stage, lighting and temporary tent
provided for events



daily use of open space
each of the programmes within the hybrid leak onto the open space, and pedestrians use the square as a throughfare



weekend market
storage, waste, water & electricity
provided for stalls to clip on to

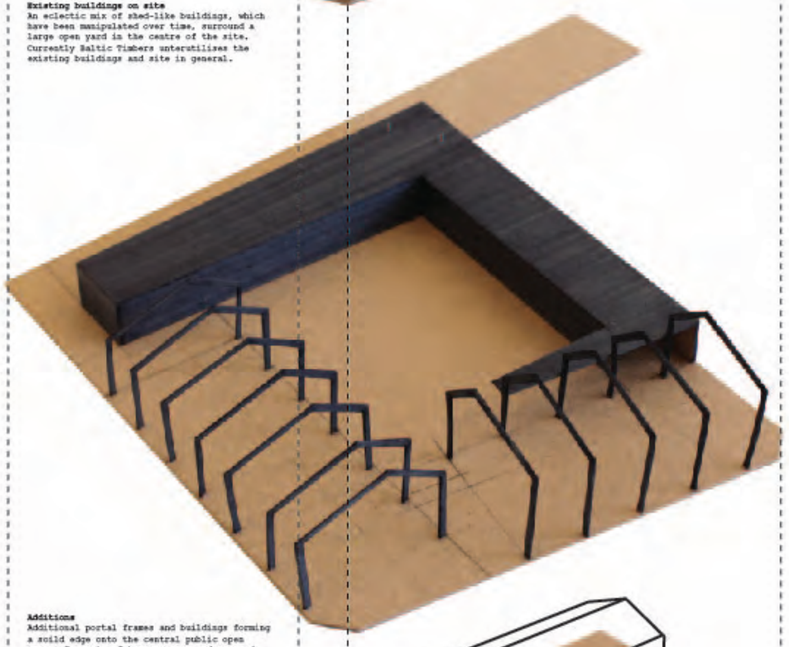
Brick wall between Woodstock Station and Albert Road is retained. Punctures, through which traders can sell produce, will be made in the wall

The front facade is retained. Currently, the facade does not correlate with the buildings behind. New openings in the facade will open the retail space to Albert Road and opposite park. By making openings in the front facade, the intention is that the internal open public space becomes an extension of the park.

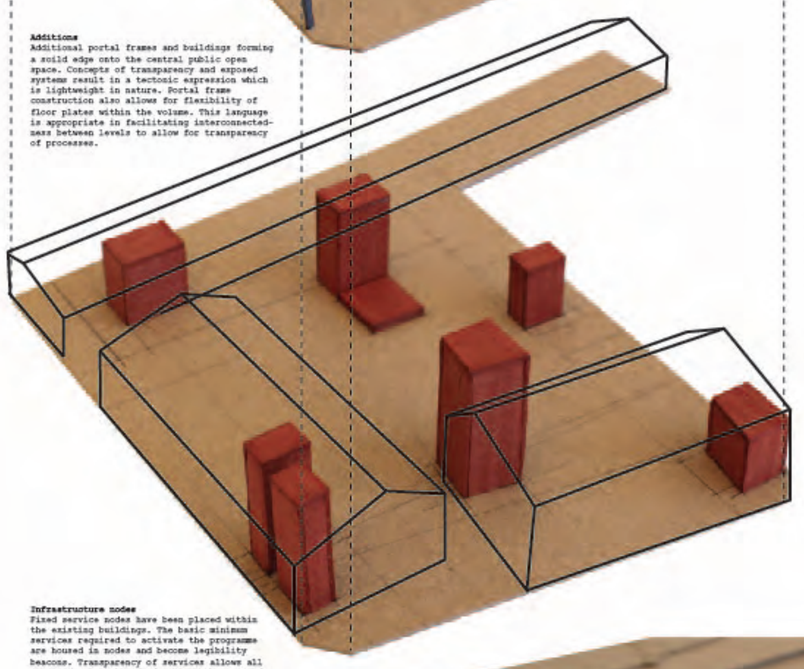
The existing portal frame is to be retained and reappropriated as a greenhouse. The sheeting and infill brickwork will be removed and replace with translucent/glass infill panels.

The brick walls of two wood storage areas will be retained. The roofs and corrogated sheeting walls will be removed. These buildings are to form part of the solid edge, along with the waste management area, which holds the open public space.

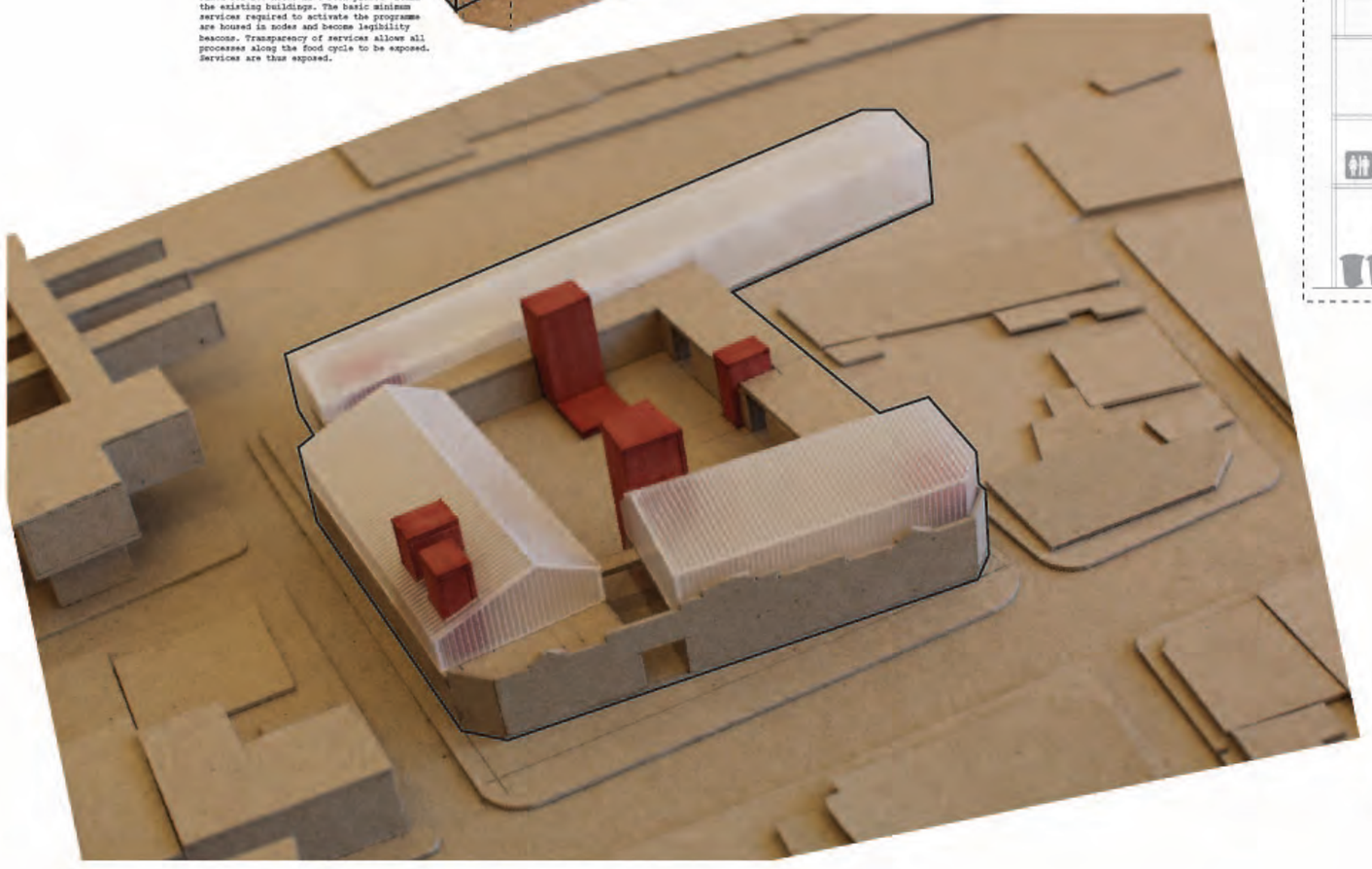
Existing buildings on site
An eclectic mix of shed-like buildings, which have been manipulated over time, surround a large open yard in the centre of the site. Currently Baltic Timbers underutilizes the existing buildings and site in general.

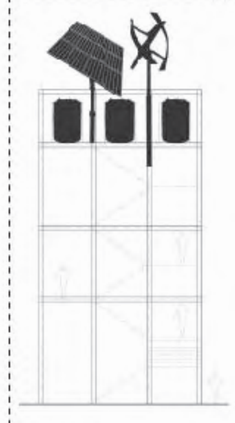


Additions
Additional portal frames and buildings forming a solid edge onto the central public open space. Concepts of transparency and exposed systems result in a tectonic expression which is lightweight in nature. Portal frame construction also allows for flexibility of floor plates within the volume. This language is appropriate in facilitating interconnectedness between levels to allow for transparency of processes.

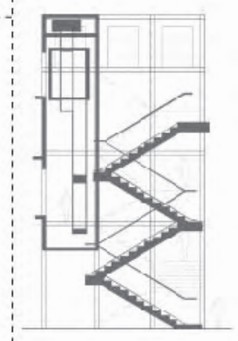


Infrastructure nodes
Fixed service nodes have been placed within the existing buildings. The basic minimum services required to activate the programme are housed in nodes and become legibility beacons. Transparency of services allows all processes along the food cycle to be exposed. Services are thus exposed.

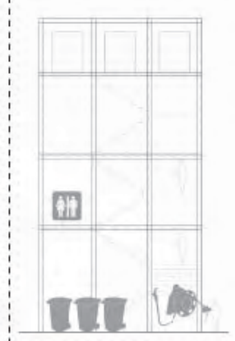




Energy systems
Energy systems include rain water storage tanks, wind turbines and solar panels. To reinforce the idea of a closed loop system, all sources of energy on site are harvested and used to run the building.



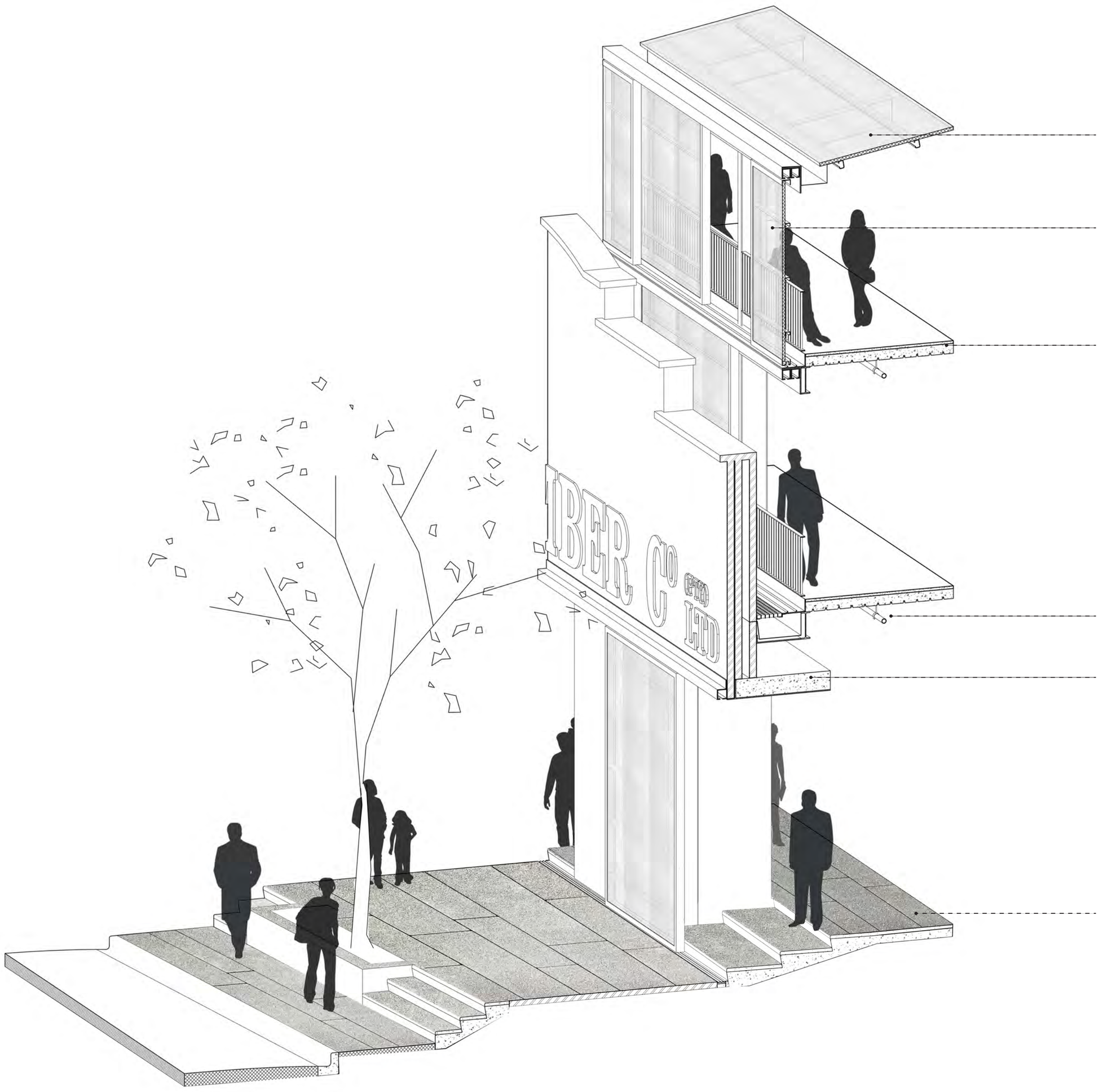
Circulation systems
All circulation between levels takes place via the nodes. The nodes act as legibility beacons.



Service systems
The nature and degree of services differs between nodes due to the particular programme surrounding the node and the services required to activate the programme.

Services include waste storage, water points, electricity points and ablutions.

a hybrid tectonic
response to existing buildings



lightweight additions to existing load bearing brickwork: lexan translucent sheeting as envelope to steel portal frame

traslucent infill steel roller shutters

bondek slab on steel column and beam construction. all structure exposed

general lighting provided across retail and processing space.

existing facade retained. new portal supported on new concrete columns.

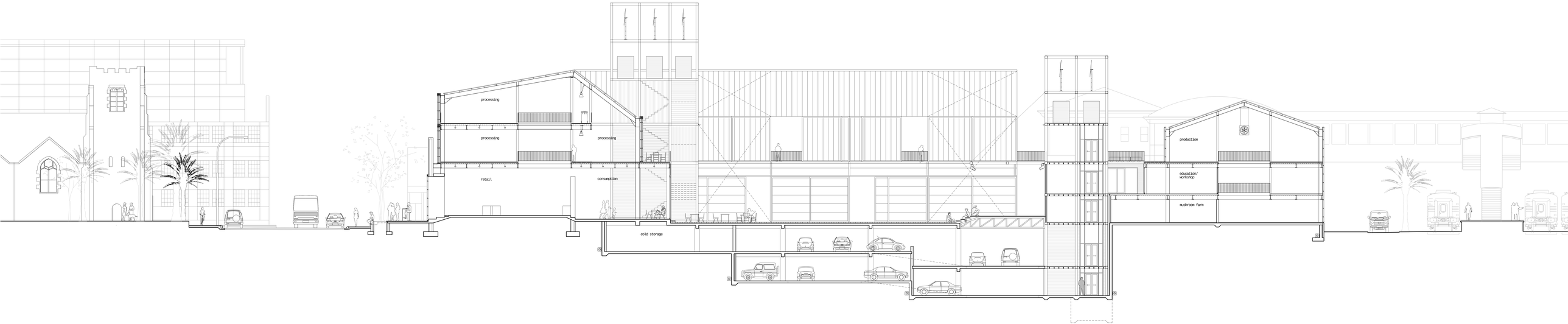
concrete pavers extend from pavement, across platform and into building

strip section through front facade
threshold between street & retail space
connection between old & new

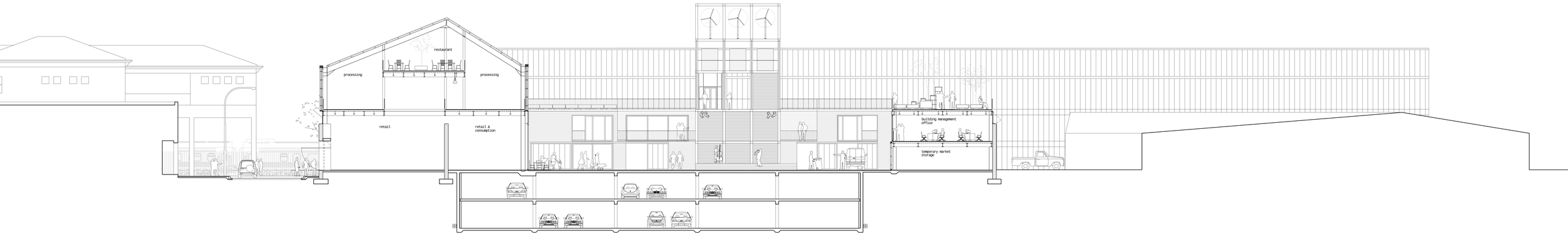
site plan

facilitating the flows of people and of work

scale 1:500



section a-a
scale 1:100



section b-b
scale 1:100